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# Alcohol Screening and Brief Intervention Program in a University Health Service

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Alcohol Screening and Brief Intervention Program in a University Health Service

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March 16, 2015

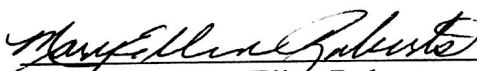
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DEDICATION I dedicate this work to my husband, Tim Conklin. I am most grateful for all you have given me, especially the gift of your love.

### **Abstract**

Alcohol misuse in the United States is a public health concern. Inappropriate alcohol consumption poses an enormous threat to the physical, social, and economic well-being of the American public. Young adults, specifically college students, are at particularly high risk for alcohol misuse. National organizations have endorsed efforts to identify and advise individuals who engage in risky drinking behaviors. Students who visit Seton Hall University Health Services for routine health care are an ideal group to engage in alcohol screening and education. The purpose of this project is to introduce and evaluate an alcohol screening and brief intervention program in a college health center in an effort to raise awareness, provide information, and offer strategies for cutting down on alcohol misuse to students who are at risk for hazardous drinking behaviors. This program implemented the AUDIT-C screening tool via an electronic health record and the Brief Motivational Interview alcohol intervention into routine care at a university health center. The program resulted in increased alcohol screening and intervention rates, as well as self-reported increased knowledge and awareness about alcohol misuse, and self-reported reduction in alcohol use among students who participated. The findings suggest that by incorporating a standard tool and intervention into routine care, more at-risk students will be identified and counseled about hazardous drinking leading to improved health outcomes.

*Keywords:* alcohol screening, brief interventions, alcohol misuse, college health



### Alcohol Screening and Brief Intervention Program in a University Health Service

According to the National Institute on Alcohol Abuse and Alcoholism:

A “binge” is a pattern of drinking alcohol that brings blood alcohol concentration to 0.08 gram percent or above. For the typical adult, this pattern corresponds to consuming 5 or more drinks (male), or 4 or more drinks (female), in about 2 hours. (“NIAAA approves definition of binge drinking,” 2004, p. 3).

Binge drinking is especially dangerous because the numbing effects of alcohol can overwhelm the body’s defenses. This altered level of consciousness often leads to engagement in risky and reckless behaviors. According to the U.S. Department of Health and Human Services (2007), each year approximately 5,000 people under the age of 21 die as a result of underage drinking. This includes 1,900 deaths from car accidents, 1,600 homicides, 300 suicides, and hundreds of other deaths due to accidents like falls, burns, and drowning.

A recent report published by the Centers for Disease Control and Prevention (“Binge drinking,” 2012, p. 1), found that binge drinking among Americans occurs more often and is more widespread than previously thought. Adults in the United States are binge drinking more frequently and consume more drinks when they do. According to the CDC, “more than 38 million U.S. adults binge drink an average of four times a month and the most drinks they consume on average is eight”. Binge drinking is most common among young adults between the ages of 18 and 34 years.

Drinking too much, including binge drinking, causes more than 80,000 deaths in the United States each year, making it the third leading cause of preventable death in the United States, and was responsible for more than \$223.5 billion in economic costs in

2006. Over half of these deaths result from injuries that disproportionately involve young people. ("Binge drinking," 2012, p. 1)

The director of the CDC, Thomas Frieden, M.D., M.P.H., has called for a collective effort to implement proven measures to reduce binge drinking at national, state, and community levels.

The purpose of this project is to integrate the standard alcohol screening tool, AUDIT-C (*Appendix A*), into the routine care of all Seton Hall University students who visit Health Services. The aim of the program is to increase the number of alcohol screenings and brief interventions (when indicated) offered to students who visit the health center and raise awareness about the risks associated with alcohol misuse. A related goal of the project is to increase the knowledge of SHU Health Services clinicians regarding alcohol misuse, indications for brief interventions as well as the elements of the motivational interviewing framework utilized when conducting an intervention. This project incorporates the recommendations of both the CDC and the USPSTF (United States Preventive Services Task Force), making it an important initiative promoting preventative nursing care leading to improved patient outcomes ("Alcohol screening and counseling", 2014). The Seton Hall University Health Services is an ideal setting to implement an alcohol screening program because most patients who visit the health center fall into the most at-risk group (young adults age 18-34 years) who would benefit from a screening and intervention program. Additionally, the clinic currently lacks a formal screening. By incorporating such a program into routine care, it is expected that the number of students screened and identified for alcohol misuse, as well as the number of appropriate interventions will increase. This, in turn, will lead to an increase in knowledge and awareness among students about alcohol misuse, risks associated with hazardous drinking, as well as the parameters of healthy, moderate alcohol intake and appropriate referrals.

The objectives for this quality improvement project are based on the principles set by the governing body and accrediting organization, AAAHC (Accreditation Association of Ambulatory Health Care) of the Seton Hall University Health Services (Accreditation Association for Ambulatory Healthcare, 2014). The standards established by these groups are aligned with evidence based clinical guidelines. The objectives are driven by the strategic goals of the organization and will serve to elevate the level of practice and the care delivered.

The basic requirements for quality improvement objectives are: 1) they have relevant functions and levels, 2) they are measurable, 3) they are needed to meet clinical requirements, 4) their importance and means of achievement are communicated to all involved personnel, and 5) they are evaluated regularly for need to change (Cochran, 2000).

The objectives for this project are as follows:

- 1) Increase the rate of screening for alcohol misuse in Seton Hall University Health Services (SHUHS).

Goal: The alcohol screening rate will increase when compared with the screening rate during a similar time period in the year preceding the study; at least 80 percent of all students who present for care during the study period will receive an alcohol screening.

Actions: The AUDIT-C will be administered via an electronic check-in process accessed by the patient upon arrival at Health Services. The three item questionnaire will be completed by the patient in the waiting room. The results will be populated directly into the patient's electronic medical record for review by the clinician.

Rationale: Embedding the screening tool into an established check-in process will enhance ease and consistency of administration. Self-administration of the

questionnaire before the scheduled visit will promote efficiency in a busy clinic setting.

- 2) Increase knowledge about alcohol use/misuse, the implications of hazardous drinking behaviors, and the indication for brief intervention among SHUHS clinicians.

Goal: SHUHS clinicians will demonstrate understanding of the low risk and high risk drinking parameters for men and women, the effects of alcohol misuse on individuals as well as the larger community, and parameters for delivery of brief alcohol interventions.

Actions: SHUHS clinicians will participate in a pre-implementation training highlighting daily and weekly healthy alcohol consumption quantities, statistical data on effects of hazardous drinking behaviors, and elements of brief motivational interventions.

Rationale: Quality of care is determined by many factors. According to the World Health Organization (2008), an organizational culture for improving quality involves engaging staff in improvement exercises. Educating staff about quality improvement and providing them skills to participate will enhance improvement activities and promote a successful program.

- 3) Increase identification of alcohol misuse among students who visit SHUHS.

Goal: The number of individuals identified during the study period as engaging in risky drinking behaviors will exceed the number of identified individuals during a similar time period in the preceding year.

Action: Seton Hall students who engaged in hazardous drinking patterns will be identified using the AUDIT-C screening tool. Chart review will be conducted to

compare the number of high risk drinkers identified at clinic visits during the study period as well as during a similar timeframe during the preceding year.

Rationale: “Increased screening enables clinicians to step in early to prevent and treat a wide range of health problems before they become too serious” ("Alcohol alert," 2005, para. 1). By identifying students who are at increased risk for alcohol related problems early, critical advice can be offered which will lead to improved health.

Early identification of risk factors is a key component of preventative health care.

- 4) Increase the rate of brief interventions offered to students who demonstrate hazardous drinking behaviors.

Goal: At least 80 percent of all students who screen positive for alcohol misuse will receive a brief motivational intervention.

Actions: All students who screen positive for alcohol misuse (a score of “3” for women, and “4” for men) will be offered a personalized brief motivational intervention. Referrals to CAPS (Counseling and Psychological Services) will also be made as needed. Clinicians will document brief intervention and/or alcohol education that is offered to the student in the electronic medical record.

Rationale: Brief interventions are used to reduce alcohol use in non-dependent drinkers. The aim is to help individuals cut down to low risk alcohol intake levels or to refer students who are unable to limit their drinking on their own to a treatment program ("Alcohol alert," 2005, para. 4).

- 5) Increase awareness and knowledge about alcohol use and misuse among students who visit SHUHS during the study period.

Goal: At least 80 percent of students who participate in the program will report increased awareness and/or knowledge about alcohol use and misuse.

Actions: Students who screen positive for alcohol misuse will receive a post-intervention survey assessing the effectiveness of the program. The survey elicits responses pertaining specifically to the effect of the program on self-perceived awareness and knowledge related to alcohol misuse.

Rationale: Researchers at the National Institute on Alcohol Abuse and Alcoholism (2004), identify “changing people’s knowledge, attitudes, and behavioral intentions about alcohol consumption” as a key area of strategic intervention for the college alcohol problem.

- 6) Increase student self-reported reduction in alcohol use as a result of the screening and brief intervention.

Goal: At least 80 percent of students who participate in the program will report a reduction in alcohol use.

Actions: Students who screened positive for alcohol misuse will receive a post-intervention survey assessing the effectiveness of the program. The survey elicits responses pertaining to the effect of the program on reduction in alcohol use.

Rationale: Students who cut down on alcohol consumption are more likely to lower their risk of alcohol related consequences. Decreased alcohol related problems is associated with optimal physical, emotional, and cognitive health.

- 7) Recognize patterns and characteristics of students who screen positive for alcohol misuse.

Goal: Identify demographic characteristics of students who are at high risk for alcohol misuse.

Actions: Chart review will be conducted to evaluate various demographic characteristics of students who participated in the alcohol screening program as well as students who visited SHUHS during a similar time period during the preceding year. Specific demographic data including: gender, year in school, academic program, place of residence (resident/commuter), country of birth, and participation in a sorority or fraternity. Patterns will be noted and evaluated using SPSS statistical analysis.

Rationale: Recognition of demographic patterns will help identify high risk populations and guide focused outreach programs in the future.

### **Literature Review**

In the United States, alcohol consumption usually begins in adolescence. The National Institutes of Health (National Institutes on Drug Abuse, 2009, p. 36), found that 72 percent of teenagers have consumed alcohol by the end of high school, and more than 37 percent have done so by the end of eighth grade. The Substance Abuse and Mental Health Services Administration found that 26.4 percent of underage persons (ages 12-20) surveyed, reported using alcohol within the past month. Alcohol consumption in the form of binge drinking among the same group occurred at a rate of 17.4 percent (Department of Health and Human Services [Substance Abuse and Mental Health Services Administration, Office of Applied Sciences], 2007, p. 33). Alcohol misuse starts early and affects a vulnerable group.

In addition to the immediate risks associated with binge drinking, alcohol misuse can have serious long term effects as well. Young adults are particularly susceptible to the damaging effects of alcohol on their developing brain, along with a variety of adverse effects on other organs within the body. Studies have shown that young people are more prone to the effects of alcohol than older adults. According to Spear,

The developing brain tends to be more sensitive to disruption by chronic drinking than the mature adult brain. As a result, heavy consumption during adolescence may affect development of certain brain regions including the hippocampus, involved in learning and memory (Spear, 2004, p. 25).

Animal and human studies also suggest that early heavy alcohol use may have a number of deleterious effects on bone growth and endocrine development (Dees, Disson, Hiney, Lara, & Ojeda, 2000, p. 1326). While most adolescents and young adults don't meet the criteria for alcohol dependence, studies have found that those who engage in binge drinking during adolescence are 60 percent more likely to become alcohol dependent and 70 percent more likely to participate in regular heavy drinking by age 30 (Frias, Rodriguez, Torres, Ruiz, & Ortega, 2000, p. 1083).

Alcohol use and misuse has been a problem on college campuses for decades. Studies dating back to the 1950's document the ongoing dilemma of risky and often times illegal alcohol intake among college students. Strauss and Bacon (1954) found that 7 percent of college students surveyed displayed signs of a "drinking problem". A comprehensive review of literature that was conducted by Blane and Hewitt (1977) between 1960 and 1975, revealed an increase in the mean percentage of drinking among college students. The rate of binge drinking among college students has steadily increased and has remained constant at 40-45 percent over



the past 25 years, with short term decreases in the mid 1990's. White, Kraus, and Swartzwelder (2006), found that 3 out of 5 college students who binge drink consume 10 or more drinks in one sitting.

Binge drinking among college students is a longstanding problem that results in many unfavorable consequences including accidents, injuries, cognitive damage, sexually transmitted infections, increased health care costs, increased rates of alcoholism and/or regular heavy drinking in adulthood, destruction of vital organs, and even death. A recent study conducted by United Educators (2015) found that 78 percent of campus sexual assaults involved the perpetrator, the victim, or both individuals consuming alcohol. Additionally, three-fourths of victims who delayed reporting an assault admitted to alcohol consumption prior to the incident and a shocking 26 percent did not even clearly remember the assault. The CDC and the United States Preventive Services Task Force (2004) have called for routine screening and brief counseling interventions to reduce alcohol misuse in primary care settings (USPSTF Grade B recommendation). A college health center is an ideal environment to implement a formal screening tool, raise awareness, and offer strategies to cut down on heavy drinking.

The decision whether to screen for alcohol misuse is similar to the decision to screen for any other medical condition. It is dependent on the presence of an undetected group of affected individuals in the population that will be screened, the accuracy and ease of administration of the screening test, availability of interventions that lead to clinically significant improved outcomes for those with disease identified after positive screening, and the proof that benefits exceed the harms of screening (PubMed Health, 2013).

The presence of undetected alcohol misuse is significant. It is estimated that 9-36 percent of patients who are seen in primary care settings have a current or lifetime diagnosis of alcohol

misuse or dependence. Studies have shown that only 10 percent of primary care patients receive appropriate assessment and referral for treatment (Kaner, Dickinson, & Beyer, 2009). The statistics for college students are even more alarming. According to the NIAAA, almost half of all college students report engaging in high risk drinking at least once in a two week period (Johnston, O'Malley, Bachman, & Schulenberg, 2004). Almost one-third of students studied met the criteria for alcohol abuse and 6 percent met diagnostic criteria for dependence. Only 32.5 percent of health centers at four year institutions routinely screen for alcohol problems and a mere 17 percent use a standardized instrument in screening (Knight, Wechsler, Kuo, Seibring, Weitzman, & Schuckit, 2002).

Alcohol use disorder, which ranges from hazardous drinking, to binge drinking, and dependence, is more common than admitted and often goes underdiagnosed. The rate of alcohol misuse is highest among college age individuals. College students are less likely to seek help for problem drinking due to a number of factors which include: misconceptions about “normal” alcohol use and social norms, lack of awareness regarding criteria for high risk drinking, and fear of consequences. It has been well established that using a standardized alcohol screening tool for alcohol misuse in a college health center is optimal for identification and referral of at risk students. Several studies have shown that assessment and brief feedback were associated with reductions in alcohol use, negative consequences, or both (Larimer & Cronce, 2002).

The use of a psychometrically sound screening tool is integral in identifying students who are at risk. Several tools are available and have been validated for effective use in the primary care setting. Examples include: CAGE which focuses on the consequences of drinking, it has good sensitivity and specificity for alcohol dependence but is less sensitive for identification of non-dependent high-risk drinking; TWEAK is a modification of the CAGE and has been found

to be better in picking up drinking problems in trauma related cases and in pregnant women (Burns, Gray, & Smith, 2010); the AUDIT has been found not only to have high sensitivity (83 percent) and specificity (90 percent) for identifying alcohol dependence (World Health Organization, 2001), but also has been more sensitive than the CAGE questionnaire (85 percent vs. 75 percent) for identifying harmful drinking, hazardous drinking, and at-risk drinking. It has been found to be more suitable for adolescents and young adults who tend to fall into the harmful/hazardous drinking category rather than the dependent category. The NIAAA (2005) has found that the use of a single-item screening test, “How many times in the last year have you had more than four drinks (for women) or five drinks (for men) in a day?” is effective in detecting a current alcohol use disorder. It is simple and easy to use. However, its sensitivity (82 percent) and specificity (79 percent) is lower than that of the AUDIT (Smith, Schmidt, Allensworth-Davies, & Saitz, 2009). Finally, the AUDIT-C, an abbreviated version of the full AUDIT consists of the first three questions from the original tool. It has a sensitivity ranging from 85-95 percent and specificity of 91 percent (Bradley, DeBenedetti, Williams, Frank, & Kivlahan, 2007), making it comparable to the full scale AUDIT while allowing greater ease of use due to its brevity. The AUDIT-C is ideal for identifying alcohol misuse in a busy primary care setting. Originally developed by the World Health Organization in 1982, the AUDIT and AUDIT-C are available for use in the public domain (Clinical Data Interchange Standards Consortium, 2014), making it readily accessible for use by primary care providers.

While choosing the most appropriate screening tool is imperative for a successful program, of equal importance is implementing the most effective intervention. The efficacy of brief interventions in reducing high risk drinking patterns is well documented. Fleming and Manwell (1999) conducted a systematic review evaluating the efficacy of alcohol screening and

brief intervention in a primary care setting. The review revealed that without exception, screening and brief interventions for alcohol misuse results in better health outcomes. A randomized controlled study conducted by McCambridge and Day (2007) investigated the effects of an alcohol screening program in reducing hazardous drinking. Interestingly, this study revealed that being screened and having an awareness of the monitoring of drinking behaviors (without a specific intervention) can lead to reduced self-reported hazardous drinking. The implementation of the screening tool actually served as an intervention.

Another systematic review conducted by Kaner and colleagues (2009), assessed the effectiveness of brief interventions in primary care and found that brief interventions can reduce alcohol consumption in men but they are unproven in women. The study also revealed that longer counseling sessions had little additional impact over time, a relevant finding when considering a busy clinic environment.

Brief alcohol interventions specifically among college students has also been well studied. Martens and Smith (2013) examined the effects of two single component, brief, in-person alcohol interventions and compared those with general alcohol education. The researchers found that the personal normative feedback style of intervention was more effective than both the protective behavioral strategies feedback style and the general alcohol education intervention. A similar randomized controlled study conducted by researchers at a private residential university in the United States compared four alcohol interventions: brief motivational interventions, Alcohol 101 Plus, Alcohol Edu for Sanctions, and a delayed control group (Carey, Carey, Henson, Maisto, & DeMartini, 2010). The goal of the study was to identify differences in the in-person brief motivational interventions when compared with other computer-delivered interventions. The results showed that brief motivational intervention was

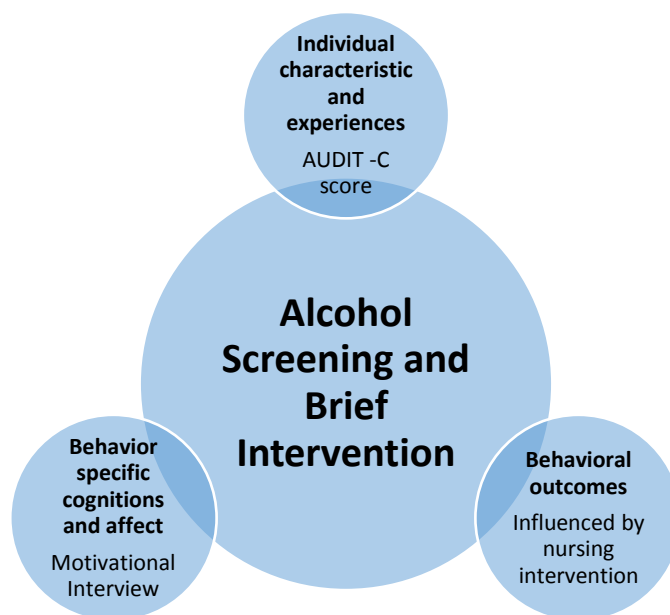
superior to the other intervention modalities in optimizing outcomes. A third study that investigated alcohol screening and interventions in a college setting compared outcomes among high-risk individuals who were randomly assigned to either an experimental group (received two brief motivational interviewing sessions) and a control group (Schaus, Sole, McCoy, Mullett, & O'Brien, 2009). The study revealed that the brief interventions delivered by providers in a college health center to high-risk drinkers resulted in significantly decreased alcohol consumption, high risk drinking, and alcohol related harms.

While each of the studies above varied in methodology, the goals and outcomes were similar. Each study aimed to compare the effects of a variety of alcohol misuse related interventions and to identify the most effective strategy for reducing risky drinking behaviors. The findings support the implementation of brief motivational interventions in high-risk drinkers.

Nola Pender's Health Promotion Model serves as the theoretical framework for this program. The Health Promotion Model defines health as a "positive dynamic rather than simply the absence of disease" (Marriner & Raile, 2005). This theoretical outline describes the multi-faceted nature of individuals as they engage with their environment in the pursuit of well-being. It focuses on the achievement of the desired outcome of health, rather than the management of disease.

The Health Promotion Model highlights three areas that relate to one's health: 1) individuals' characteristics and experiences, 2) behavior specific cognitions and affect, and 3) behavioral outcomes. Pender suggests that the unique character traits and background of individuals will influence their future actions. A person's knowledge regarding a specific behavior will serve as a potential motivational influence and external variables, including nursing or health care interventions, can affect change in behavior (Marriner & Raile, 2005).

Pender's framework lends itself to all aspects of this alcohol screening and intervention program (*Figure 1*). The AUDIT-C screening tool provides a focused assessment of students' experiences specifically related to alcohol and elicits a score which provides objective data for the student. This process quickly depicts a clear history of the individual's alcohol related experiences and behaviors. The alcohol intervention assesses the students' knowledge and perceptions about their drinking behaviors while providing important information about healthy drinking patterns. Guidance related to moderate alcohol consumption and strategies for cutting down are nursing interventions that empower students to attain the desired outcome of well-being.



*Figure 1. This diagram represents the relation between the Alcohol Screening and Brief Intervention program and the Health Promotion Model.*

The methodological framework for this quality improvement exercise utilizes the Plan-Do-Study-Act (PDSA) approach. This method, developed by Walter Shewart in the 1920's (Ransom, Joshi, Nash, & Ransom, 2008), allows for continuous improvement and learning. A

formal review of the screening program will take place three months after the initiation of the study. The process will be evaluated for feasibility and effectiveness of the screening tool and interventions. The outcomes of the program will be compared with predicted results and will be benchmarked against relevant historical data as well as data collected from a similar practice setting (another NJ college health center). The screening and intervention process will be modified based on the effect (or lack) of the change. Strengths and weaknesses of the program will be evaluated.

The PDSA methodology for the Alcohol Screening and Brief Intervention Program is described below (see *Appendix B* for an illustration of the methodology):

Plan (What we are trying to accomplish?): We are trying to screen all Seton Hall students who visit Health Services for high risk drinking patterns and identify students who engage in risky drinking behaviors.

Do (What did we implement?): We will screen all students using a standardized screening tool (AUDIT-C). We will identify and offer appropriate counseling for students who exhibit risky drinking patterns (who screen positive).

Study (What did we learn/did we meet our goals?): We will note the number of students screened compared with the total number of students in the target group by reviewing charts retrospectively. We will also note the number of students who are appropriately counseled when risky behaviors are identified. We will also survey students after the screening and intervention to assess changes in awareness, knowledge and reported behaviors as a result of the screening and brief intervention. We will compare our results to data obtained during the previous year and to that of another university health center.

Act (What conclusions can be drawn/how can we do better?): Changes in the screening and intervention process will be made based on the findings of chart review and patient survey.

### **Method**

The first step in planning a successful alcohol screening program in the SHUHS was initiating a dialogue with the director, Mary Beth Costello. The author's (myself) role as a Nurse Practitioner in the Health Service facilitated open communication with the governing body as well as other staff members. Our shared ideals and common goals served to strengthen the commitment of all involved in the implementation of the program. The project is in alignment with the objectives of the practice, and in fact serves as a meaningful quality improvement activity that will enhance the quality of care delivered. Quality improvement exercises are a valued component of the clinic's practice and are required to maintain AAAHC accreditation. In short, this project addresses the needs of the campus community while supporting the mission and goals of the Health Service.

The Alcohol Screening and Brief Intervention program will meet all of the goals of an improvement exercise. The program is safe. Administration of a psychometrically sound screening tool through an online questionnaire poses no danger to the patient. The program is effective. This initiative is consistent with evidenced based guidelines and recommendations. The program is efficient. The screening and interventions are incorporated into patient visits and do not interfere with the flow or content of the encounter. The program is timely. Implementation of this screening and intervention process will raise awareness regarding heavy alcohol use and bring to light a current public health dilemma. Additionally, this initiative offers a strategy for addressing a worsening alcohol problem on campus (Toole, 2012). The program is patient centered. The primary goal of this exercise is to improve patient outcomes through



assessment of a potential health risk. The program is equitable. There will be no exclusions based on race, gender, socioeconomic level, insurance status, etc. All individuals who comprise the target population will be offered alcohol screening and brief intervention. This quality improvement program is consistent with the goals and mission of Health Services, Seton Hall University, and the larger community.

This program also serves as an important initiative in improving existing campus wide practices. Seton Hall University has a strict alcohol policy in order to limit underage drinking and ensure proper use of alcohol, but lacks individualized outreach and screening. Currently, the university requires all freshmen to complete an online self-assessment of alcohol consumption patterns, prior to their first semester. However, there is no follow up or in-person feedback given. In addition, students who have violated the university alcohol policy or have been involved with an alcohol related medical transport are mandated to participate in a one to two hour alcohol intervention session at the Counseling and Psychological Services (CAPS), oftentimes this comes too late, after harm has already been done. The integration of an alcohol screening program in Health Services will complement and strengthen the existing programs at Seton Hall.

The program was developed under the guidance of mentor, Dr. Jude Uy, Ph.D., a staff psychologist in CAPS. Dr. Uy has expertise in the management of alcohol and other drug addictions. Under his direction, an appropriate screening tool was selected and the elements of the brief interventions were defined. Dr. Uy also played a key role in the staff training that took place prior to the implementation of the program. Dr. Uy's involvement in the program not only adds value and credibility, it also strengthens the relationship between Health Services and CAPS. This partnership which will promote continuity in the referral process when high risk drinkers are identified.

Integration of this program was also communicated with members of related departments at Seton Hall. Inter-departmental meetings occur on a regular basis, allowing for discussion of the identified problems and proposed solutions. Health Services works closely with the other departments (ie. Student Services, Community Development, and CAPS) which are responsible for the alcohol use policies and counseling related to misuse. Working together to support related efforts enhances the cohesiveness of the groups. The well established relationships and common goals facilitate a successful program and potentially improve overall outcomes.

**Phases of Implementation** The program consisted of four phases: needs assessment, pre-implementation chart review and staff training, implementation of the alcohol screening and brief intervention, and post-implementation chart review and survey.

**Needs assessment.** The need for an alcohol screening program at Seton Hall is quite obvious. The impetus for the program was based on two factors: lack of a formal process to screen individuals for alcohol misuse using a standard tool, and increasing rates of hazardous drinking on campus. Risky drinking patterns are on the rise at Seton Hall, evidenced by an increased number of alcohol related incidents on campus. According to Albert Cardona, Associate Director of Housing and Residence Life, the amount of alcohol related medical transports in the fall 2011 nearly doubled when compared with the entire previous year, jumping from a total of 15 during the 2010-2011 academic year, to 28 just in the fall of 2011. The majority (76 percent) of students involved in the alcohol related incidents were freshmen (Toole, 2012, p. 1). In addition, liquor law violations continued to rise during 2012 and 2013 on the South Orange campus, as documented in the Seton Hall University Campus Security and Fire Safety Report (2014). It is evident that there is an immediate need for increased screening and

identification of students who will benefit from preventive interventions related to alcohol misuse.

**Pre-implementation chart review and staff training.** During the second phase, a pre-implementation chart audit was conducted to review all Health Services visits during a similar timeframe (two weeks) in the preceding year (early fall 2013). Approximately 240 students visited Health Services during this timeframe. Each chart was evaluated for documentation of any alcohol screening or intervention that was conducted (including results and follow-up). Presence of related behaviors was also noted, specifically looking at tobacco or other substance use. Demographics including: gender, place of birth, year in school, academic program, place of residence (resident or commuter), appointment type, and membership in SHU sorority or fraternity was also noted. All data collected during the study period was stored on a USB thumb drive which was stored in a locked drawer in Health Services. Access to the thumb drive was limited to the author and the director of Health Services.

Prior to launching the program, a pre-implementation staff training took place. All clinical staff were provided with the rationale for the program, definition of alcohol misuse, a description of the most at-risk population, background data about the immediate and long-term implications of hazardous drinking, an overview of the screening tool including interpretation of results, and details describing the framework of motivational interviewing. The material was presented via a Prezi audiovisual presentation, group discussion, and role playing. The role playing activity captured various patient presentations that are typical in a college health setting. Dr. Uy participated in the training exercise and answered questions through the lens of behavioral health and offered strategies to assess and facilitate readiness for change. Clinical staff completed a pre- and post- test to evaluate the effectiveness of the training (*Appendix C*).

**Implementation of the alcohol screening and brief intervention.** Implementation occurred with the commencement of the fall 2014 semester. The target population included all students who visited Health Services for routine care during the study period (a two week time period during the fall semester). Students were asked to electronically check-in prior to their appointment via a laptop computer located at one of three private kiosks in the Health Services waiting room. The check-in process included electronic completion of a depression screening (PHQ2), the alcohol screening (AUDIT-C), and acknowledgement of a financial disclaimer. Images of standard drinks were posted at each check-in kiosk. This provided students with a visual reference as they completed the three item screening. A statement about Patient's rights and responsibilities, as well as Health Services privacy practices were also communicated and signed off by all students at the initial clinic visit. This process emphasized confidentiality, leading to honest and accurate answers. Responses to the screenings populated directly into the patient's electronic medical record. All information was then reviewed by the assigned provider and was available before the student entered the exam room. After the check-in process was complete, the student was taken to an exam room. Students who screened positive (a score of  $\geq 3$  for women and  $\geq 4$  for men) for alcohol misuse were offered a brief intervention. The brief intervention combined motivational interviewing and personalized normative feedback (*Appendix D*). With the students' permission, the clinician provided feedback about the student's drinking patterns relative to healthy patterns. An assessment of the students' feelings regarding their drinking behaviors was made by asking: Do you feel that your drinking behaviors are unhealthy or unsafe? This was a concise and uniform method for gauging students' awareness about alcohol misuse and their readiness for change. Information about college drinking behaviors was offered, along with facts about the consequences of heavy episodic drinking. In

addition, information about healthy drinking patterns was provided. Finally, the clinician offered advice based on the student's openness and willingness to discuss change. Goals for cutting down were discussed when indicated. An educational handout (*Appendix E*) was offered as a convenient reference, providing strategies to cut back to healthy drinking levels. Screening via the electronic check-in prior to the visit eased the process for both the patient and the provider, enhancing office flow and efficiency.

**Post-implementation chart review and survey.** The final phase of the project focused on evaluation of the program. A chart audit of all patients who visited Health Services during the study period was conducted. The chart review examined the same elements as the initial review: documentation of any alcohol screening or intervention that was conducted (including results and follow-up), presence of related behaviors, specifically looking at tobacco or other substance use. Demographics including: gender, place of birth, year in school, academic program, place of residence (resident or commuter), and appointment type.

The effectiveness of the program was assessed during the last phase of the project. Two and a half weeks after the study period, a post-intervention survey (*Appendix F*) was sent electronically to students who screened positive for alcohol misuse during the study period. The eleven item survey (see *Appendix F*) included demographic information and evaluated the level of awareness and knowledge about alcohol misuse that the student perceives has increased as a result of the screening, and the influence of the alcohol screening and intervention on drinking behaviors. The anonymous survey ran for 2 weeks, with reminders sent on days 5 and 11.

The data from the chart audits and the post-implementation survey were analyzed and compared using SPSS software. The Pearson's chi-square test was the proposed methodology for testing the null hypothesis, which states: There will be no significant change in the rate of

alcohol screening and brief intervention, the perceived amount of knowledge and awareness about alcohol use/misuse, and the perceived reduction in risky drinking behaviors among Seton Hall students who visit Health Services. Statistical conclusions were reported and will be used to guide future programming.

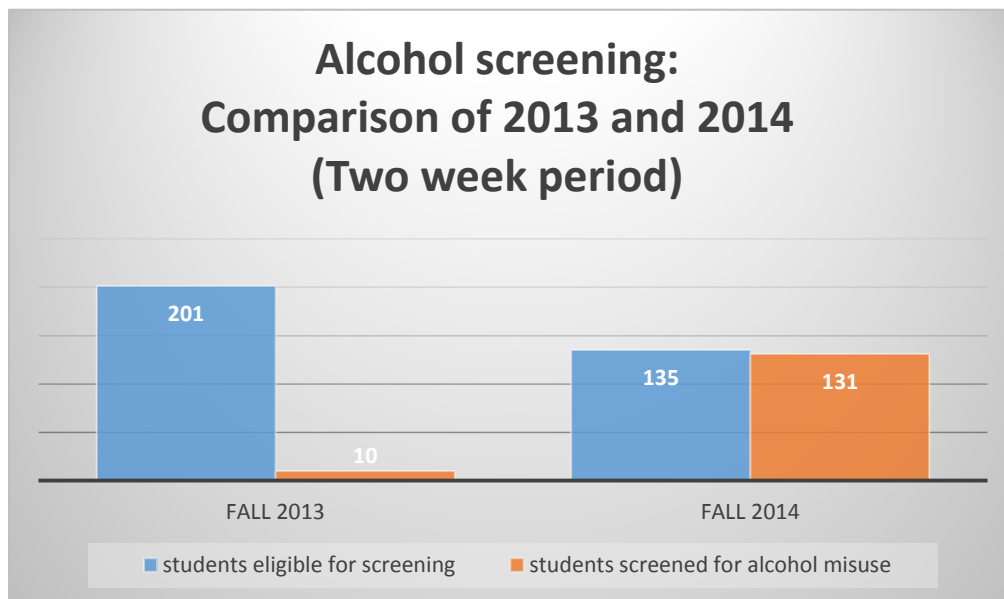
### **Results**

This project was evaluated using a retrospective chart review that was conducted three months after the implementation of the program. Standard reports were generated using software available within the SHUHS electronic health record (Medicat). The reports provided data about the total number of patient visits during the study period (October 20-31, 2014), the number of the alcohol screenings that were administered (n=131), the total number of positive screenings (n=37) and the number of the brief interventions (n=37) that were offered. The results of the alcohol screenings and details about the intervention were also included. Unique patient accounts (n=135) were isolated to ensure that students who visited the health center multiple times during the study period were not counted as eligible for screening and intervention more than once. The sample included all students (undergraduates, graduate students, and law students) who visited Health Services during the defined period. After the reports were obtained, the author then reviewed individual patient records to confirm that a screening was not done during a clinic visit earlier in the semester (making screening unnecessary during the study period) and to collect demographic data on students who participated in the screening and brief intervention. In an effort to eliminate bias, all patients who were screened or interviewed by the author were excluded from the study.

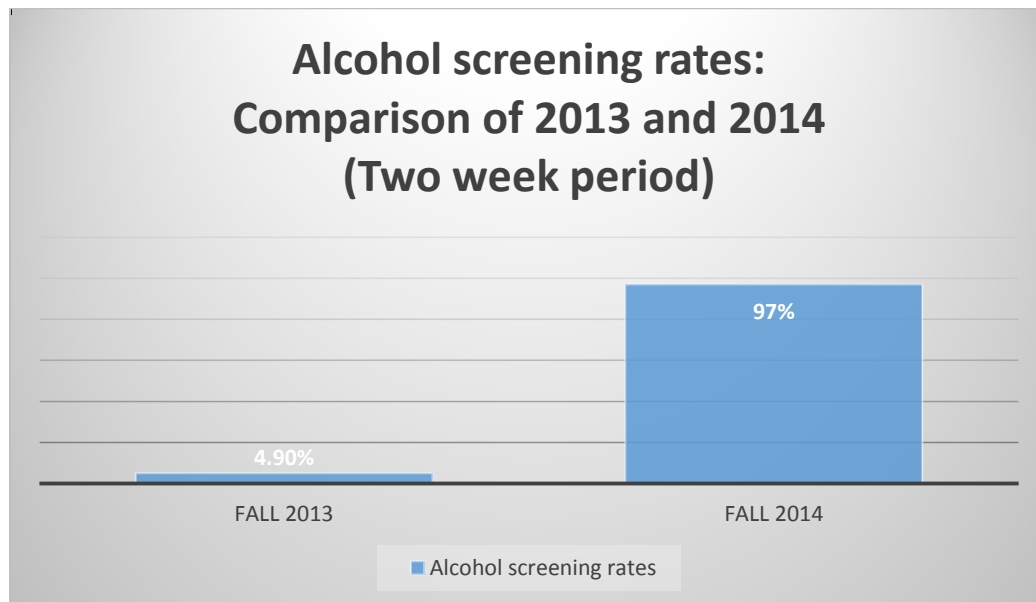
The results of the program are reported to reflect the previously established objectives:

- 1) Objective: Increase the rate of screening for alcohol misuse in Seton Hall University Health Services. The goal was to screen at least 80 percent of students who visited Health Services.

Result: The chart review conducted during a two week period in the fall of 2013 revealed that 201 unique students visited Health Services. Of those 201 students, 10 were offered an informal alcohol screening (4.9 percent screening rate). A similar review conducted during the two week study period in the fall of 2014 showed that 135 students were eligible for an alcohol screening. Of those 135 students, 131 completed the AUDIT-C (97 percent screening rate). The screening rate increased over 92 percent after the program was implemented.



*Figure 2. This graph represents a comparison of fall 2013 and fall 2014 number of alcohol screenings.*

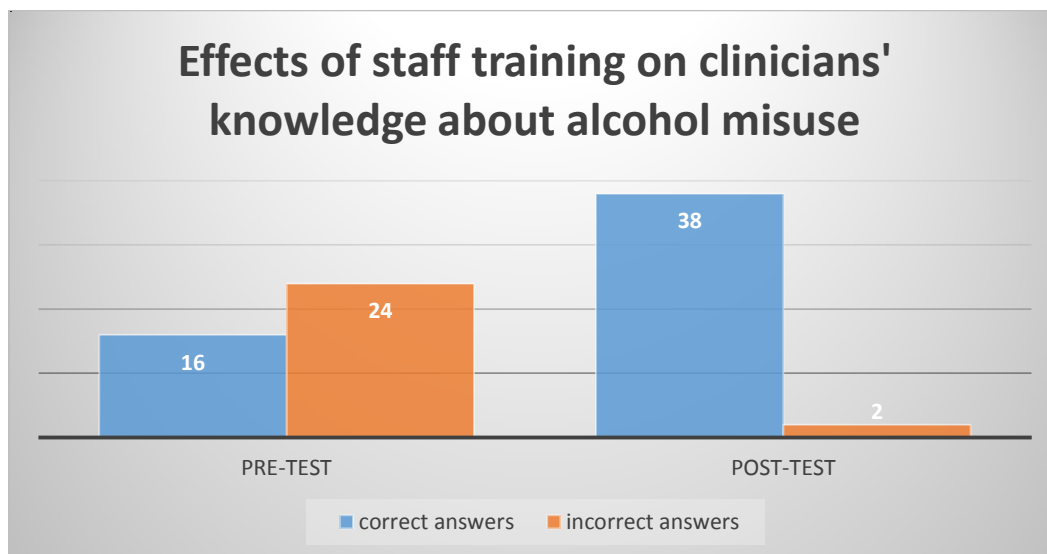


*Figure 3. This graph represents a comparison of the fall 2013 and fall 2014 alcohol screening rates.*

- 2) Objective: Increase knowledge about alcohol use/misuse, the implications of hazardous drinking behaviors, and the indications for brief interventions among SHUHS clinicians.

Result: The effectiveness of the pre-implementation staff training was measured by evaluating the results of the pre- and post-test completed by all clinical staff. The five item assessment was administered to 8 clinicians. The total number of correct answers on the pre-test (16 out of a possible 40) was compared with the total number of correct answers on the post-test (38 out of a possible 40). It is evident that clinicians' knowledge and understanding regarding alcohol misuse increased as a result of the training exercise.

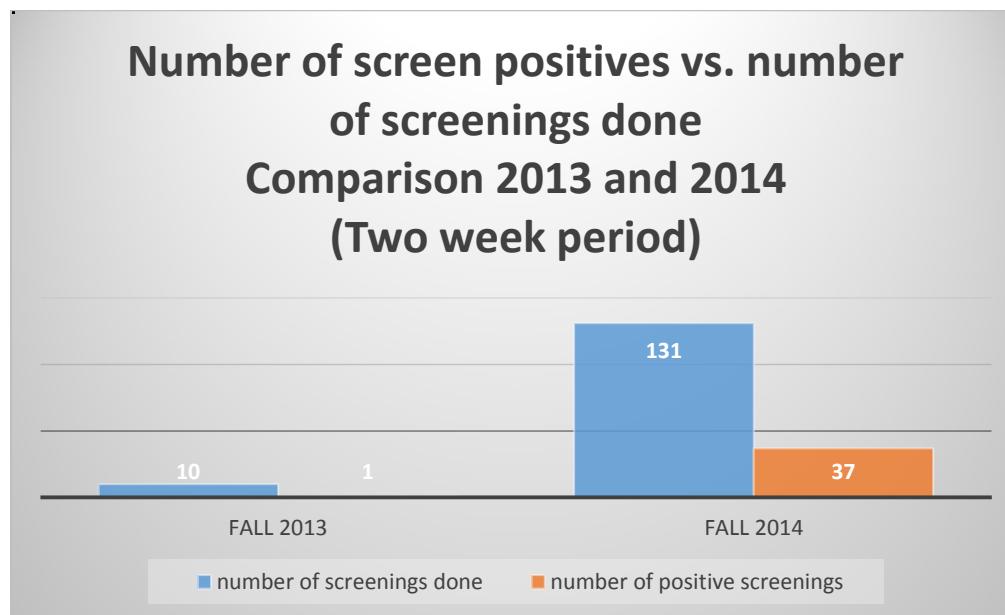




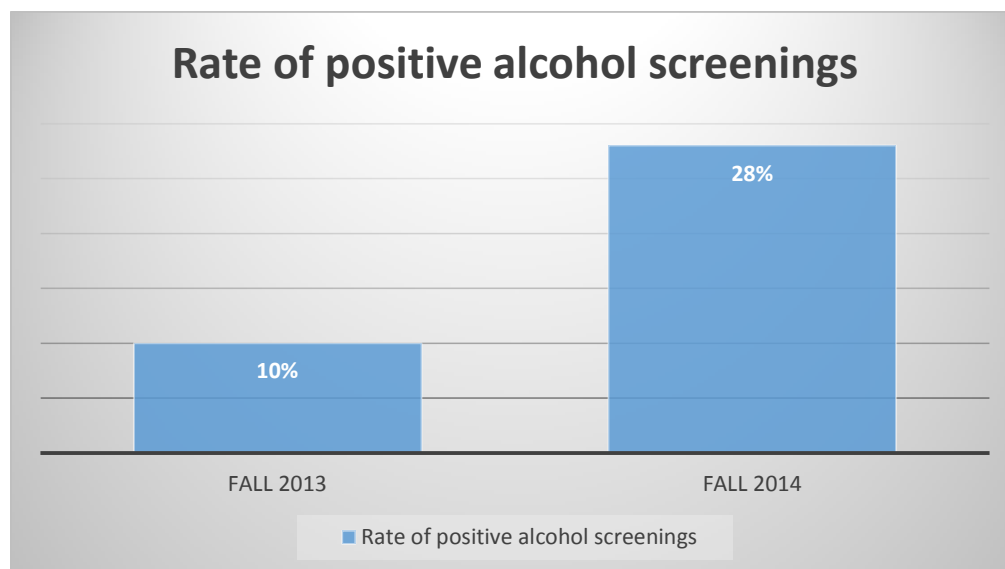
*Figure 4. This graph represents the effects of pre-implementation staff training on SHUHS clinicians' knowledge about alcohol misuse.*

3.) Objective: Increase identification of alcohol misuse among students who visit SHUHS.

Result: A chart review looking at the specific two week period in fall 2013 showed that one student was identified as engaging in risky drinking behaviors. The charts reviewed during the 2014 study period revealed that 37 students were identified as hazardous drinkers. Clearly, the number of students identified as alcohol misusers increased after the screening program was implemented. Of equal importance, the rate of identification increased from 10 percent (one student screened positive out of ten who received screening) to 28 percent (37 students screened positive out of 131 who received screening).



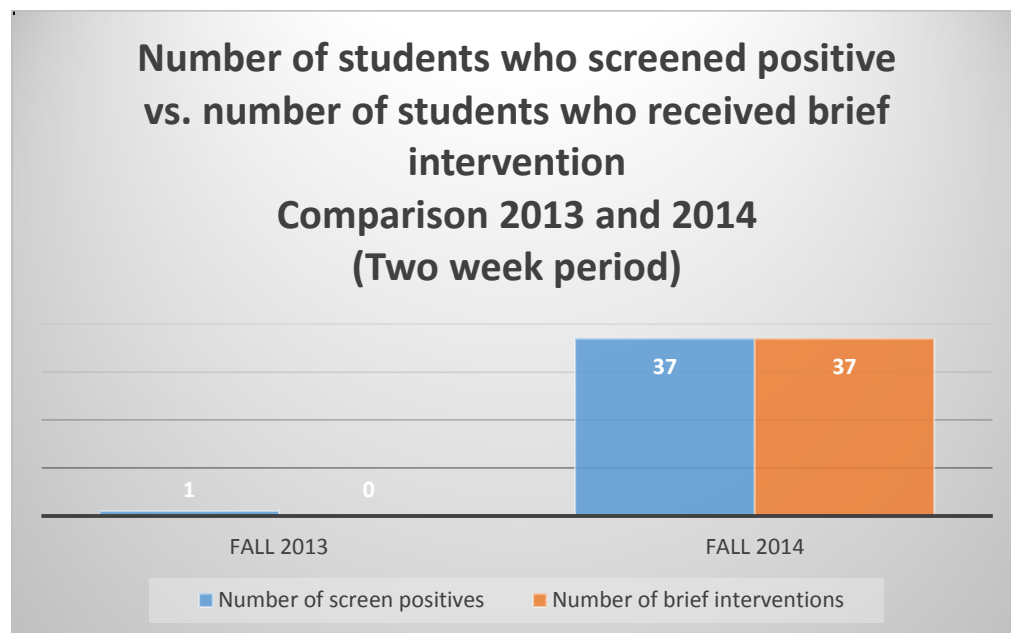
*Figure 5. This graph represents a comparison of the fall 2013 and fall 2014 samples, noting the number of students who screened positive for alcohol misuse versus the number of alcohol screenings done.*



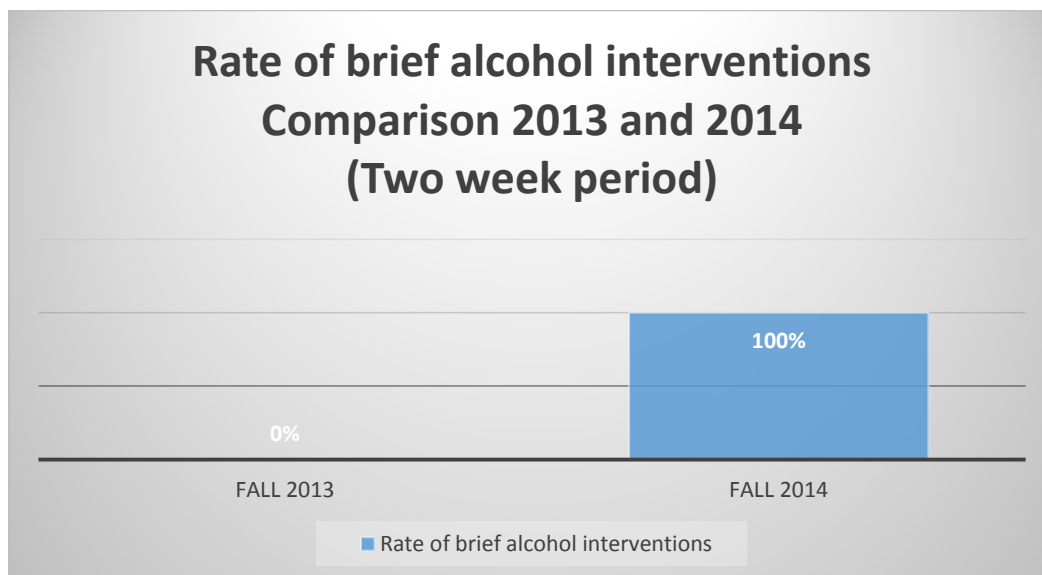
*Figure 6. This graph compares the rate of positive alcohol screening in the fall 2013 and fall 2014.*

4.) Objective: Increase the rate of brief interventions offered to students who demonstrate hazardous drinking behaviors. The goal was that at least 80 percent of all students who screened positive for alcohol misuse would receive a brief motivational intervention.

Result: Retrospective chart review revealed that no brief interventions were conducted during the assigned two week period in the fall 2013. There were 37 students who received a brief alcohol intervention during the two week study period in the fall 2014. The rate of brief alcohol interventions increased from 0 percent to 100 percent after implementation of the program.



*Figure 7. This graph represents a comparison of the number of students who screened positive for alcohol misuse and the number of students who received a brief intervention in the fall 2013 and fall 2014.*



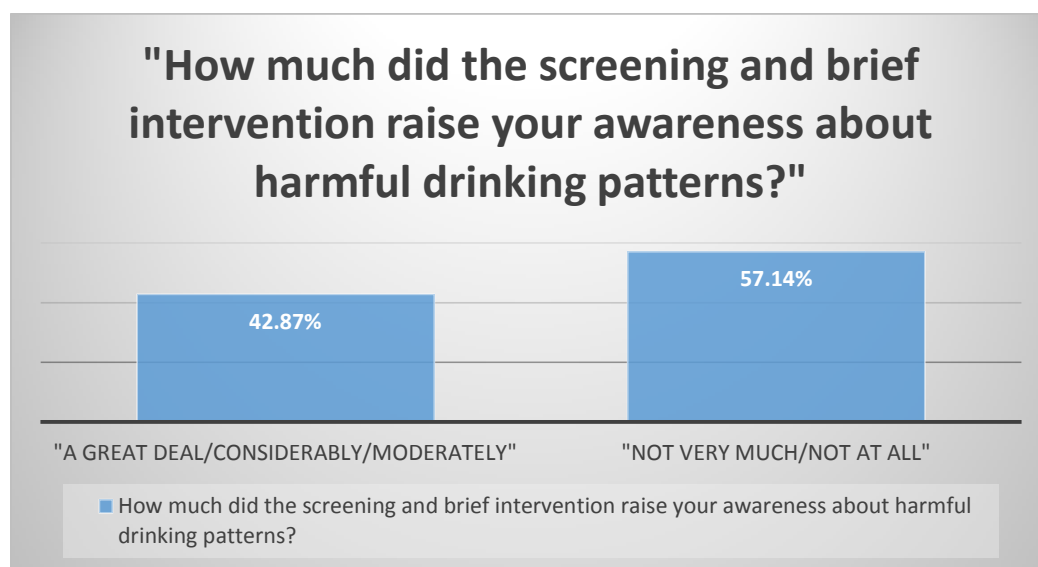
*Figure 8. This graph represents a comparison of the rate of brief alcohol interventions done in the fall 2013 and fall 2014.*

5.) Objective: Increase awareness and knowledge about alcohol use and misuse among students who visit SHUHS during the study period. The goal was that at least 80 percent of students who participate in the alcohol screening and brief intervention will report increased knowledge about alcohol use/misuse.

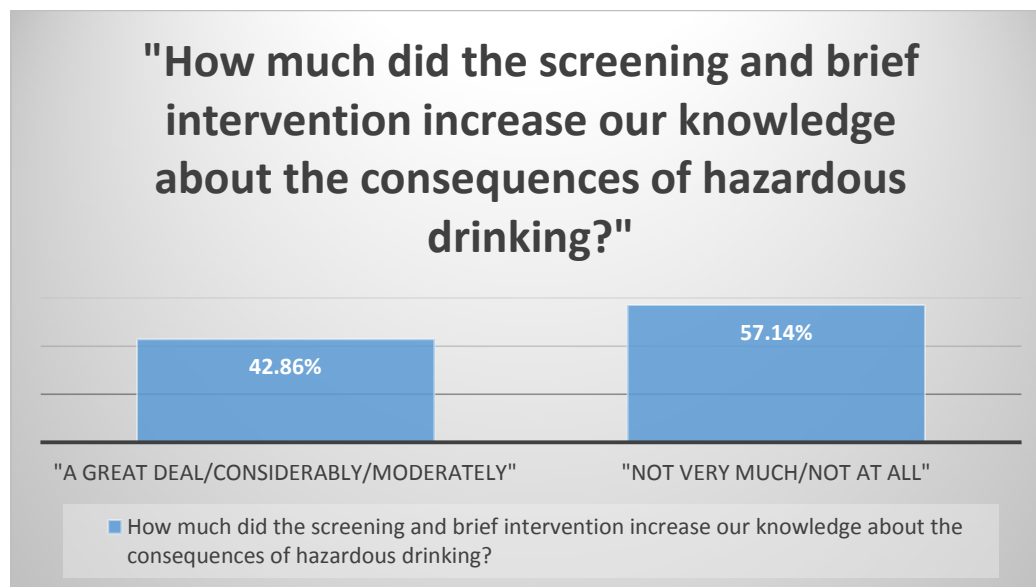
Result: It was difficult to collect data reflecting the level of knowledge and awareness about alcohol misuse among students who visited SHUHS during the fall of 2013 as it was not formally assessed or documented.

In the fall 2014, the effect of the alcohol screening and brief intervention program on participants' level of awareness and knowledge was assessed via a post-implementation survey that was sent to all students who screened positive during the study period. A total of 41 students received an electronic survey via Campus Labs. This sample size includes students who were later excluded from the study due to

potential investigator bias as the survey was sent prior to the establishment of the exclusion criterion. Seven students responded (17 percent response rate). All responses were anonymous. Three out of seven students (42.86 percent) felt that the alcohol screening and brief intervention led to an increase in both awareness and knowledge about harmful drinking patterns and the consequences of hazardous drinking.



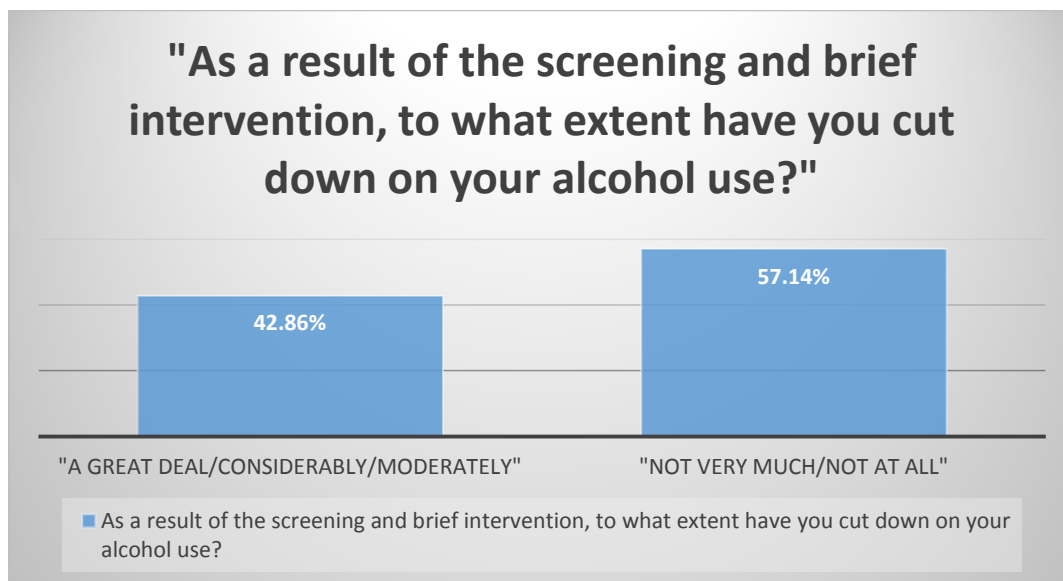
*Figure 9. This graph represents the responses of students who answered question 7 on the post-intervention survey.*



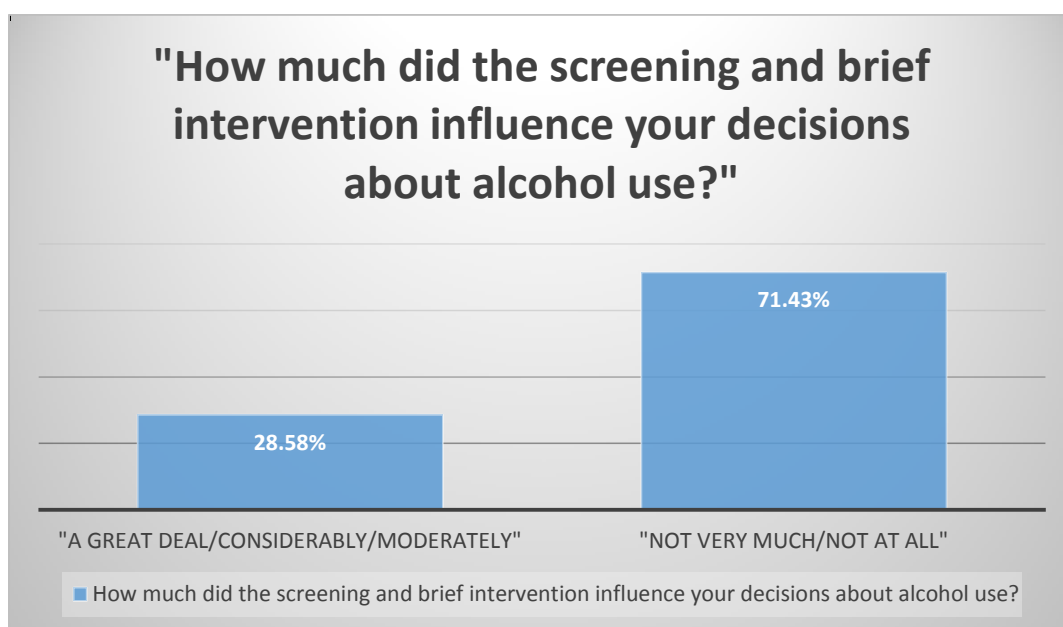
*Figure 10. This graph represents the responses of students who answered question 8 on the post-intervention survey.*

6.) Objective: Increase student self-reported reduction in alcohol use as a result of the screening and brief intervention. The goal was that at least 80 percent of students who participate in the program will report a reduction in alcohol use.

Result: No data regarding self-reported reduction in alcohol use after being screened or receiving an alcohol intervention was collected or recorded prior to the implementation of the program. The 2014 post-implementation survey revealed that 42.86 percent of students who responded reported they cut down on their alcohol use as a result of the screening and brief intervention and 28.57 percent reported that the program influenced their decisions about alcohol use.



*Figure 11. This graph represents the responses of students who answered question 10 on the post-intervention survey.*



*Figure 12. This graph represents the responses of students who answered question 9 on the post-intervention survey.*

Additionally, three survey respondents offered the following favorable comments when asked, “What aspects of the screening and brief intervention did you find most helpful?”

- “Finding out the basic limits of alcohol”
- “Identifying there a was an alcohol problem I need to be aware of was helpful”
- “the aspects I found most helpful was the nurse coming to talk to me”

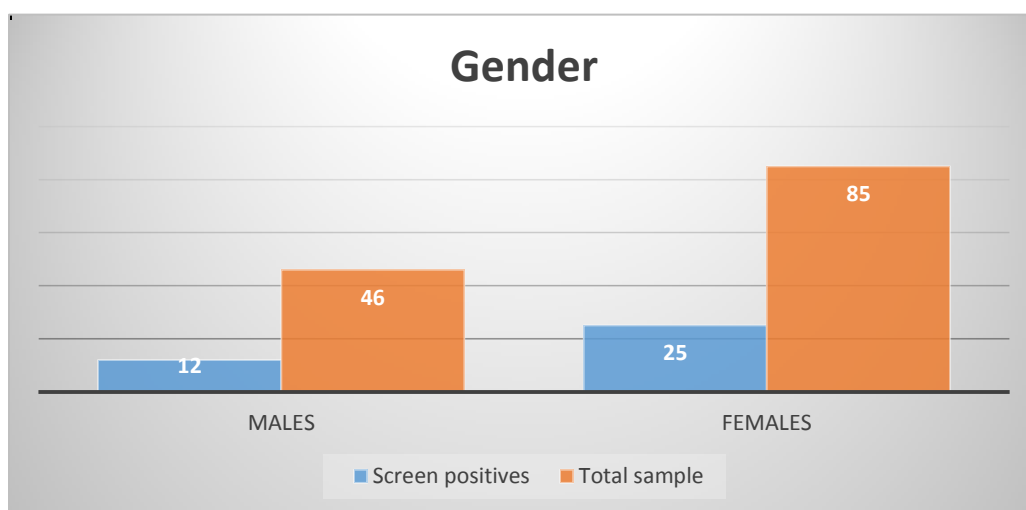
The complete results of the survey can be found in *Appendix G*.

7.) Objective: Recognize patterns and characteristics of students who screen positive for alcohol misuse. The goal was to identify demographic features of students who are at high risk for alcohol misuse.

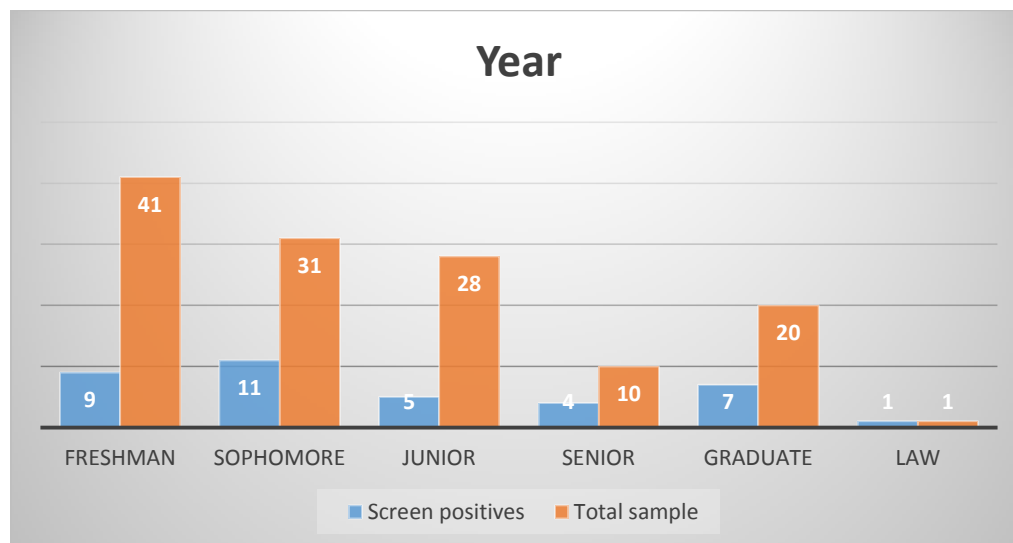
Result: It was not possible to note trends related to students who engaged in risky drinking behaviors in the fall 2013 sample as the sample size consisted of one person. That individual was a male, graduate student in the School of Theology. He was a commuter who denied using other substances and came to Health Services for a routine physical exam. Among the students who visited Health Services during the fall 2014 study period, females screened positive for alcohol misuse at a higher rate than males. In fact, females made up 63.6 percent of the total sample but accounted for 67 percent of the total number of screen positives. Although their screen positive rate exceeded that of males (19 percent versus 9 percent), this was not a statistically significant finding,  $\chi^2(1, n= 131) = .530, p < .05$ . More freshmen completed the AUDIT-C when compared with other classes but represented only 24 percent of screen positive students. Sophomores had the highest rate of positive screenings at 29



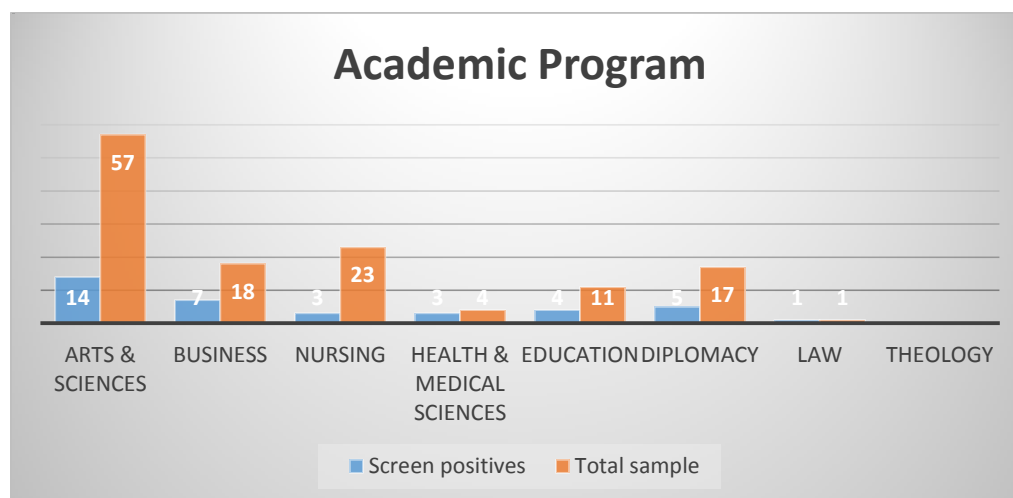
percent,  $\chi^2 (1, n= 131) = .239, p < .05$ . Students in the college of Arts and Sciences screened positive at a higher rate than any other academic program (37.8 percent),  $\chi^2 (1, n= 131) = .466, p < .05$ . Over half (59.5 percent) of those who screened positive for alcohol misuse live on-campus  $\chi^2 (1, n= 131) = .389, p < .05$ . Among high risk drinkers, the leading reasons for visiting Health Services was related to URI (upper respiratory infection)/EENT (eyes, ears, nose throat) (29.7 percent) and to receive a vaccine (27 percent),  $\chi^2 (1, n= 131) = .974, p < .05$ . The majority (56.8 percent) of students with risky drinking habits denied using other substances  $\chi^2 (1, n= 131) = .973, p < .05$ . The following graphs reflect data from the fall 2014 sample.



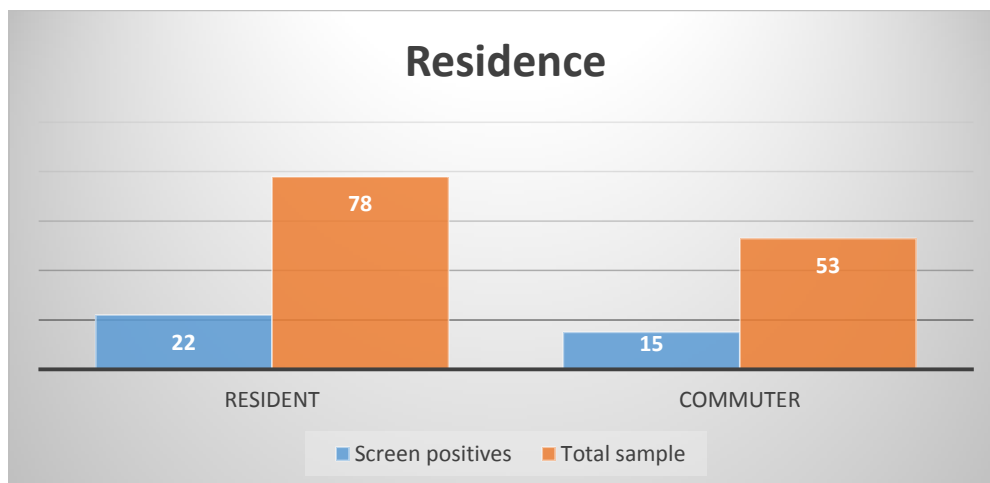
*Figure 13. This graph represents the gender distribution of students who screened positive for alcohol misuse and the total sample during the study period.*



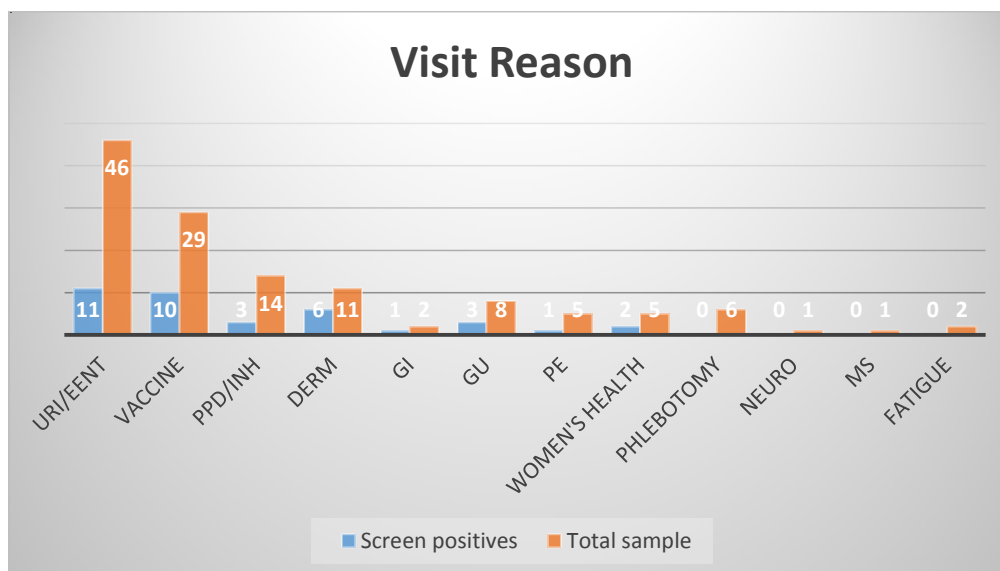
*Figure 14. This graph represents the distribution of students who screened positive for alcohol misuse and the total sample by year during the study period.*



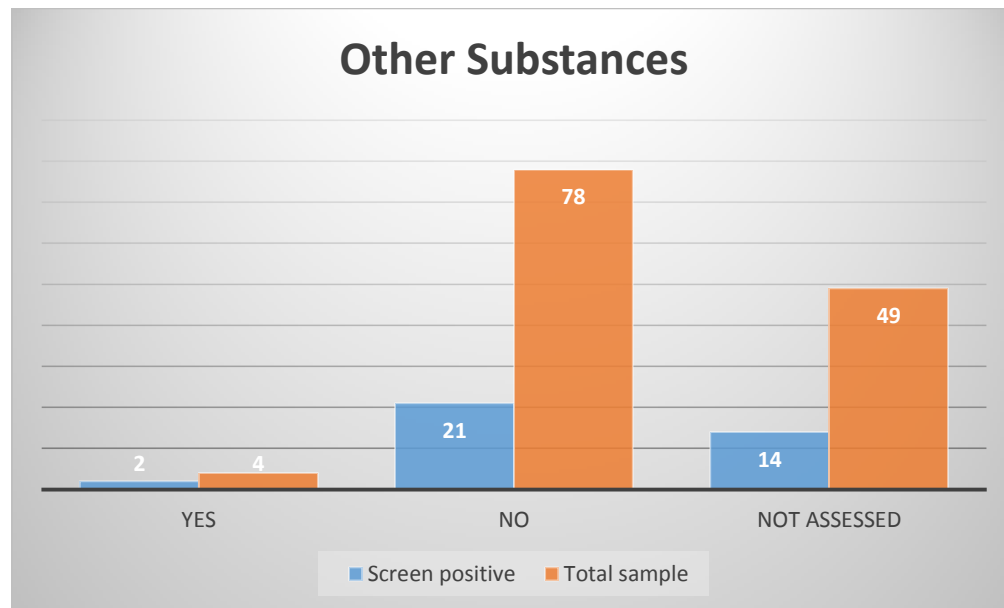
*Figure 15. This graph represents the distribution of students who screened positive for alcohol misuse by academic program during the study period.*



*Figure 16. This graph represents the distribution of students who screened positive for alcohol misuse and total sample by place of residence during the study period.*



*Figure 17. This graph represents the distribution of students who screened positive for alcohol misuse and total sample by reason for clinic visit during the study period.*



*Figure 18. This graph represents the distribution of students who screened positive for alcohol misuse and the total sample related to report of other substance use during the study period.*

## Discussion

### Implementation and Sustainability

There is mounting evidence that healthcare advancements and research findings are limited by an inability to transform data into real life practice (Ellis, O'Brien, Robinson, Armour, Brouwers, Ciliska, Sussman, & Raina., 2005). If the information is not transferable to the setting in which it will be delivered due to individual or organizational barriers it is essentially useless. According to Feldstein and Glasgow (2008), "as long as efficacy and effectiveness trials are considered complete without considering implementation outside the research study, the public health potential of the original investments will not be realized". It is important to evaluate a research investigation or quality improvement project through the lens of implementation and sustainability in routine practice.

This project was examined using PRISM (Practical, Robust Implementation and Sustainability Model), a comprehensive framework utilized to help translate research into practice. This model was developed by research scientists, Adrienne Feldstein, MD and Russell Glasgow, Ph.D. (2008). The model considers key elements that evaluate how an intervention interacts with patients and providers to influence implementation, maintenance, and effectiveness. There are six components of the model: program/intervention from an organizational perspective, program/intervention from a patient perspective, characteristics of the organizational recipients, characteristics of patient recipients, external environment, and the implementation and sustainability infrastructure (Feldstein and Glasgow, 2008).

This alcohol screening and brief intervention program was readily accepted by the organization. The SHUHS leadership team welcomed the program because it introduced an evidence based guideline that had not yet been adapted while promoting continuous quality improvement; satisfying two goals of the practice. The program is simple. The screening and intervention template is embedded into the electronic health record that all clinicians utilize, facilitating ease of use and tracking of data. The intervention did not add undue burden to the organization.

The program is patient focused. The screening tool provides objective data and the intervention is administered only after permission is granted. The patient is offered information about individual health risks as well as guidance regarding healthy drinking behaviors. All advice is provided in a non-threatening way. Important health related issues are addressed at no additional cost to the patient.

The organizational recipients (SHUHS staff) of the program were supported through pre-implementation training and regular communication both during the initial phase and throughout

the semester. The staff recognized the relevance of the program and acknowledged the associated benefits. The program was incorporated into the patient visit making it easy to implement and was therefore perceived as sustainable.

The characteristics of the patient recipients (college students) strengthen the rationale for this program. This target population represents the group that is most at-risk for alcohol misuse. This emphasized the need for the initiation of the program. By identifying hazardous drinking behaviors and offering education about associated risks, the overall disease burden of this vulnerable group will be lessened.

The external environment, specifically the larger Seton Hall community, supports the program. The Division of Student Services is committed to minimizing the risks of all Seton Hall students. Specific attention to alcohol misuse has been established recently. The university created a new position when the Director of Alcohol and Other Drug programs was hired. The division also recently adopted the Buzz program, a game oriented alcohol presentation. This interactive program has been incorporated into the core curriculum and is now a required component of the University Life class. This program complements the current efforts of the Seton Hall community.

The infrastructure of both the external environment and the practice setting can support and sustain an ongoing screening and intervention program. The electronic health record has been tweaked to eliminate the technical glitches that off-set the initial administration of the screening tool and the collection of data. Although it was disappointing to experience a slow start it was reassuring to realize the issues were easily resolved. The staff have been adequately trained and the investigator is readily available to serve as an ongoing resource. The established training exercise can easily be repeated if there is a turn-over in staff.

**Conclusions**

Alcohol screening and brief intervention rates significantly increased after the implementation of the program. There was also a self-reported increase in awareness and knowledge about hazardous drinking behaviors as well as a self-reported reduction in alcohol use among students who participated in the screening and intervention program. Data analysis did not demonstrate statistically significant findings related to the demographic characteristics associated with risky drinkers. Future evaluation efforts should focus on inclusion of a larger total sample size which may yield more information about screen positive subjects leading to potentially generalizable data. Organizational programming and outreach should include the entire student population and not be limited to a specific group.

**Strengths**

This project incorporated a retrospective chart review, an important research methodology used in healthcare to examine current practice and to direct future investigations (Vassar and Holzmann, 2013). The data reflected multiple elements of patient visits delivered both before and after the implementation of the screening tool, allowing for direct comparisons. This approach is patient centered and elicited important information about previous practices and highlighted the need for the change in process. The retrospective chart review was a strength of the project.

The program also examined both qualitative and quantitative data. The qualitative data described the behaviors and characteristics of the sample, allowing for trends in reported attitudes and actions to be noted. The quantitative analysis provided data that was both descriptive and distinct. The data was easily analyzed using a statistical test (Pearson's chi square) and provided a clear directive on how the information should be interpreted and applied

to future efforts. “While qualitative and quantitative research approaches have their strengths and weaknesses, they can be extremely effective in combination with one another” (Madrigal and McClain, 2012). The consideration of both qualitative and quantitative data is a strength of the study.

### **Weaknesses**

A relative weakness of the study was the inability to obtain certain patient demographics. The investigator was unable to collect details about membership in sorority, fraternity and athletic organizations as well as the country of origin for all of the participants. This information was not readily accessible and was therefore excluded. The exclusion of this data limits the ability to notice trends in alcohol misuse related to participation in collegiate organizations and ethnicity.

Another weakness of the project was the sample size of the screen positive patients. Although the original sample size was ideal, the number of patients who screened positive for alcohol misuse in the fall 2013 and fall 2014 was limited (n=1 and n=37, respectively). According to Witte and Witte (2010), “a sample size of hundreds is excessively large, and one of less than about five is unduly small”. An adequate sample size is integral in detecting a false null hypothesis. This limits the ability to generalize the results.

Finally, this study incorporated a screening tool that elicited data based on the subjects’ self-reported drinking patterns. While the AUDIT-C is a psychometrically sound instrument, its reliability is dependent on truthful answers. It is possible that some students did not answer the screening questions honestly. This is a potential limitation of the study.

Two factors served as both a strength and a weakness in this research project. The recent adaptation of an electronic health record (EHR) in the SHUHS ultimately served to promote



efficiency of documentation and office flow but not without a rocky start. While the EHR facilitated the administration of the screening tool, it also impeded the collection of data because there were technical factors that caused the initial delivery of the screening questionnaire to be inconsistent. Therefore, the data collection was postponed and did not directly correspond to the exact timeframe examined in 2013 as initially planned. Similarly, the role of the investigator as staff Nurse Practitioner in the clinic had both advantages and disadvantages. As a member of the SHUHS staff, the author had a deep understanding and familiarity with the goals and operations of the practice setting. This relationship strengthened the support and buy-in of fellow staff members when adapting the alcohol screening and intervention program into clinical practice. However, because the investigator was directly involved with the care of patients during the study period, a significant number of subjects were excluded.

### **Significance**

This Alcohol Screening and Brief Intervention Program provides an important service to all students who visit Health Services by enhancing the quality of routine care. Through staff education and utilization of the electronic health record, a standard screening tool was easily embedded into daily practice allowing students who engage in risky drinking behaviors to be readily identified and appropriately counseled. This program addresses a major public health dilemma at a local level; it effectively incorporates an evidenced based clinical guideline into the health care of the most at-risk group. By offering personalized strategies for cutting down to healthy levels, poor health outcomes related to alcohol misuse will be prevented and the overall disease burden will be lessened. The success of this program is largely due to engagement of key stakeholders who have a shared interest in implementing measurable interventions that can be easily evaluated and adjusted in the future if necessary.

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*Appendix A***AUDIT-C**

Question	0	1	2	3	4
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you drink?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more
3. How often do you have 6 or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily

<b>Score</b>		<b>In men</b> , a score of 4 or more is considered positive, optimal for identifying hazardous drinking.*
		<b>In women</b> , a score of 3 or more is considered positive, optimal for identifying hazardous drinking.*

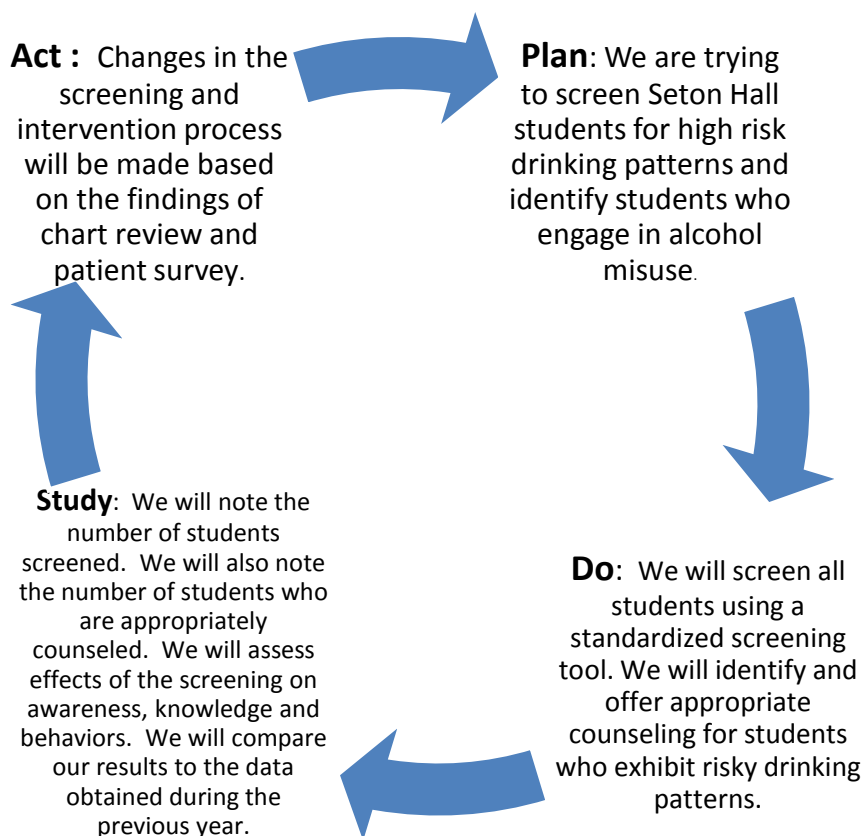
\*when the points are all from question #1 alone (#2 and #3 are zero), it can be assumed that the patient is drinking below recommended limits and it is suggested that the provider review the patient's alcohol intake over the past few months to confirm accuracy.

(Bush, Kivlahan, McDonell, Fihn, & Bradley, 1998)



*Appendix B*

# PDSA



*Appendix C***Alcohol Screening and Brief Intervention Staff Training****Pre/Post Test**

1. Alcohol misuse is the fourth leading cause of preventable death in the U.S.			
True		False	
2. Drinking too much causes _____ deaths in the U.S. every year.			
40,000	60,000	80,000	95,000
3. Binge drinking typically corresponds to ____ or more drinks for men, and ____ or more drinks for women in about 2 hours.			
6 (men), 4 (women)	5 (men), 4 (women)	5 (men), 3 (women)	6 (men), 5 (women)
4. The first step in a brief alcohol intervention is _____.			
Providing individualized feedback	Assessing readiness to change	Asking permission	
5. A score of “4” on the AUDIT-C is considered positive for high risk drinking.			
True		False	

## Appendix D

## Brief Motivational Interview

<p><b>1. Raise the subject</b></p> <ul style="list-style-type: none"> <li><i>“Would you mind if we talked for a few minutes about your alcohol use?”</i></li> <li>-ask permission</li> <li>-avoid arguing or confrontation</li> </ul>	<p><b>3. Enhance motivation</b></p> <ul style="list-style-type: none"> <li><i>* “What do you like about your current drinking level? What do you not like about it?”</i></li> <li><i>* “On a scale of 1-10, how important is it for you to decrease your drinking?”</i></li> <li><i>* “What makes you a “_” and not a lower number?”</i></li> <li><i>* “On a scale of 1-10, how ready are you to decrease your drinking?”</i></li> <li><i>* “What would make you more ready to change?”</i> <ul style="list-style-type: none"> <li>- Assess readiness to change</li> <li>- Discuss pros and cons</li> <li>- Explore ambivalence</li> </ul> </li> </ul>
<p><b>2. Provide feedback</b></p> <ul style="list-style-type: none"> <li><i>* “We know that drinking above certain levels can cause problems such as...”</i></li> <li>-cognitive damage, damage to the intestinal tract, accidents/injuries, STI's, death.</li> <li>- review reported alcohol use amounts and patterns</li> <li>- provide information about alcohol use and health*</li> <li>- advise to cut down or abstain</li> <li>- Compare the person's alcohol use to general college population (42% of FT college students binge drink, 58% don't 1,825 college students die each year R/T alcohol related unintentional injuries)</li> <li><i>* “What do you think about this information?”</i></li> <li>- elicit response</li> </ul>	<p><b>4. Negotiate and advise</b></p> <ul style="list-style-type: none"> <li><i>* “What's the next step?”</i></li> <li><i>* “What are the barriers you anticipate in meeting your goal?”</i> <i>“How do you plan to overcome these barriers?”</i></li> <li><i>* “On a scale from 1-10, how confident are you that you will be able to make the change?”</i></li> <li><i>* “What might help you feel more confident?”</i> <ul style="list-style-type: none"> <li>- Negotiate goal</li> <li>- Provide advice and information</li> <li>- Summarize next steps and thank the patient</li> </ul> </li> </ul>

	Drinks per week	Drinks per occasion	Moderate Drinking amounts
Men	No more than 14	No more than 4	Up to 2 drinks per day
Women	No more than 7	No more than 3	Up to 1 drink per day

You should stop drinking altogether if you: plan to drive or operate machinery, take medications that interact with alcohol, have a medical condition that is aggravated by alcohol, are pregnant or plan to become pregnant.

(American Public Health Association and Education Development Center, Inc., 2008)

## Appendix E

## Alcohol and You handout

**What is binge drinking?**

"A pattern of drinking that brings a person's blood alcohol concentration (BAC) to 0.08 grams percent or above. This typically happens when men consume 5 or more drinks, and women consume 4 or more drinks, in about two hours."

(CDC, "Binge drinking", 2012)

**How U.S. students self-report drinking levels**

(Harvard School of Public Health, 2009)

**The facts:**

- According to the CDC, binge drinking affects 38 million people annually.
- Alcohol misuse is the third leading cause of preventable deaths in the U.S.
- Binge drinking causes 80,000 deaths annually.
- \$223 billion in economic costs due to binge drinking.
- Young adults between 18-34 years old are most commonly affected.

**How does binge drinking affect you?**

- Hazardous drinking has been a problem among college students for decades.
- Up to 45% of college students report binge drinking.
- 3 out of 5 students who binge drink report consuming 10 or more drinks in one sitting.
- Binge drinking leads to cognitive damage, accidents, sexually transmitted infections, increased health care costs, violence, and death.
- An estimated 1,825 college students die each year due to alcohol related accidents.
- Young adults who binge drink are 70% more likely to participate in regular heavy drinking by age 30.

**How can you reduce your risks?**

**Keep track, count and measure.** Set goals to limit drinking to healthy levels.

**Pace and space.** Sip slowly. Incorporate "drink spaces" - every other drink is nonalcoholic.

**Include food.** Don't drink on an empty stomach.

**Identify triggers** (e.g. stress, loneliness, anger, etc.) that lead to binge drinking and avoid them.

**Have a plan.** Go out with a friend and take turns being a "sober" buddy, secure a safe ride home.

**Learn how to say "No."** Be polite and firm. Your friends will understand.

**What is a standard drink?**

**One Standard Drink =**

**Moderate Drinking**

Men	Up to 2 drinks per day
Women	Up to 1 drink per day

**How much is too much?**

If you drink more than this, you are at risk for alcohol-related illness and/or injury. It is best to stay within the limits per week AND per day. Staying within the daily and weekly limits may require non-drinking days each week.

	Drinks per week	Drinks per occasion
Men	More than 14	More than 4
Women	More than 7	More than 3

(American Public Health Association SBH Manual, 2008)

*Appendix F*

## Post Alcohol Screening and Brief Intervention Survey

**Directions:** Thank you for participating in an Alcohol Screening and Brief Intervention at Health Services. In an effort to improve our delivery of recommended health screenings, we would like your feedback. Please take a few moments to complete this survey. Choose the answer that best reflects your response today.

Thank you!

Question 1

Gender:

- ☐ Male
- ☐ Female
- ☐ Transgender

Question 2

Age: (Enter a whole number)

- 

Question 3

Class standing:

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior
- ☐ Graduate student
- ☐ Law student

Question 4

Place of residence:

- ☐ On campus
- ☐ Off campus

- ☐ Family home

## Question 5

Are you a member of a: (Check up to two)

- ☐ Sorority
- ☐ Fraternity
- ☐ SHU athletic team
- ☐ None of the above

## Question 6

What is your academic program?

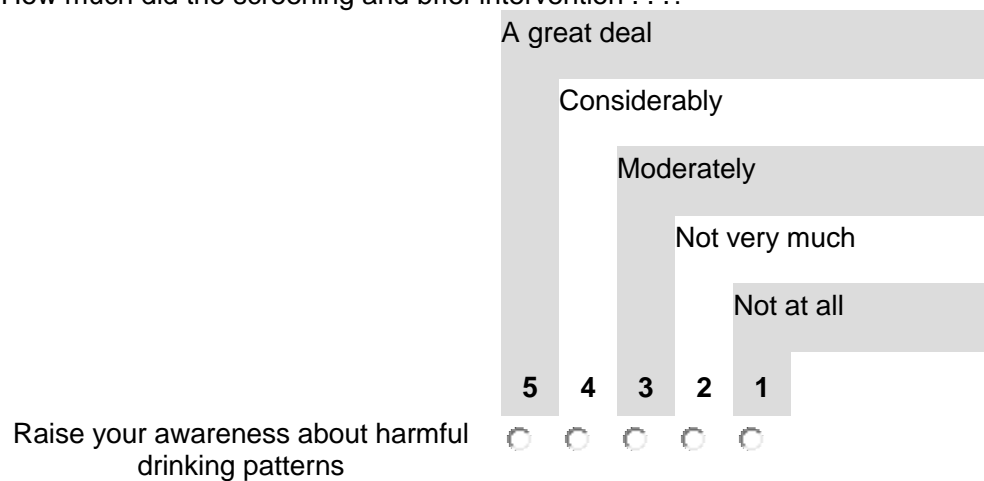
- ☐ Arts and Sciences
- ☐ Business
- ☐ Nursing
- ☐ Health and Medical Sciences
- ☐ Education
- ☐ Diplomacy
- ☐ Law
- ☐ Theology

Submit

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## Questions 7 - 9

How much did the screening and brief intervention . . . ?



	A great deal				
	Considerably				
	Moderately				
	Not very much				
	Not at all				
	5	4	3	2	1
Increase your knowledge about the consequences of hazardous drinking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Influence your decisions about alcohol use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Question 10

As a result of the screening and brief intervention, to what extent have you cut down on your alcohol use?

- ☐ A great deal
- ☐ Considerably
- ☐ Moderately
- ☐ Not very much
- ☐ Not at all

## Question 11

What aspects of the screening and brief intervention did you find most helpful?

•

### Post Alcohol Screening and Brief Intervention Survey

<b>1. Gender:</b>						
<i>Male</i>	<i>Female</i>	<i>Transgender</i>				
<b>2. Age:</b>						
<i>(enter whole number)</i>						
<b>3. What is your class standing?</b>						
<i>Freshman</i>	<i>sophomore</i>	<i>Junior</i>	<i>Senior</i>	<i>Graduate student</i>	<i>Law student</i>	
<b>4. What is your place of residence?</b>						
<i>On campus</i>		<i>Off campus</i>	<i>Family home</i>			
<b>5. Are you a member of a:</b>						
<i>Sorority</i>		<i>Fraternity</i>	<i>SHU athletic team</i>	<i>None</i>		
<b>6. What is your academic program?</b>						
<i>Arts &amp; Sciences</i>	<i>Business</i>	<i>Nursing</i>	<i>Health &amp; Medical Sciences</i>	<i>Education</i>	<i>Diplomacy</i>	<i>Theology</i>
<b>7. How much did the screening and brief intervention raise your awareness about harmful drinking patterns?</b>						
<i>a great deal</i>	<i>considerably</i>	<i>moderately</i>	<i>not very much</i>	<i>not at all</i>	<i>NA</i>	
<b>8. How much did the screening and brief intervention increase your knowledge about the consequences of hazardous drinking?</b>						
<i>a great deal</i>	<i>considerably</i>	<i>moderately</i>	<i>not very much</i>	<i>not at all</i>	<i>NA</i>	
<b>9. How much did the screening and brief intervention influence your decisions about alcohol use?</b>						
<i>a great deal</i>	<i>considerably</i>	<i>moderately</i>	<i>not very much</i>	<i>not at all</i>	<i>NA</i>	
<b>10. As a result of the screening and brief intervention, to what extent have you cut down on your alcohol use?</b>						
<i>a great deal</i>	<i>considerably</i>	<i>moderately</i>	<i>not very much</i>	<i>not at all</i>	<i>NA</i>	
<b>11. What aspects of the screening and brief intervention did you find most helpful?</b>						

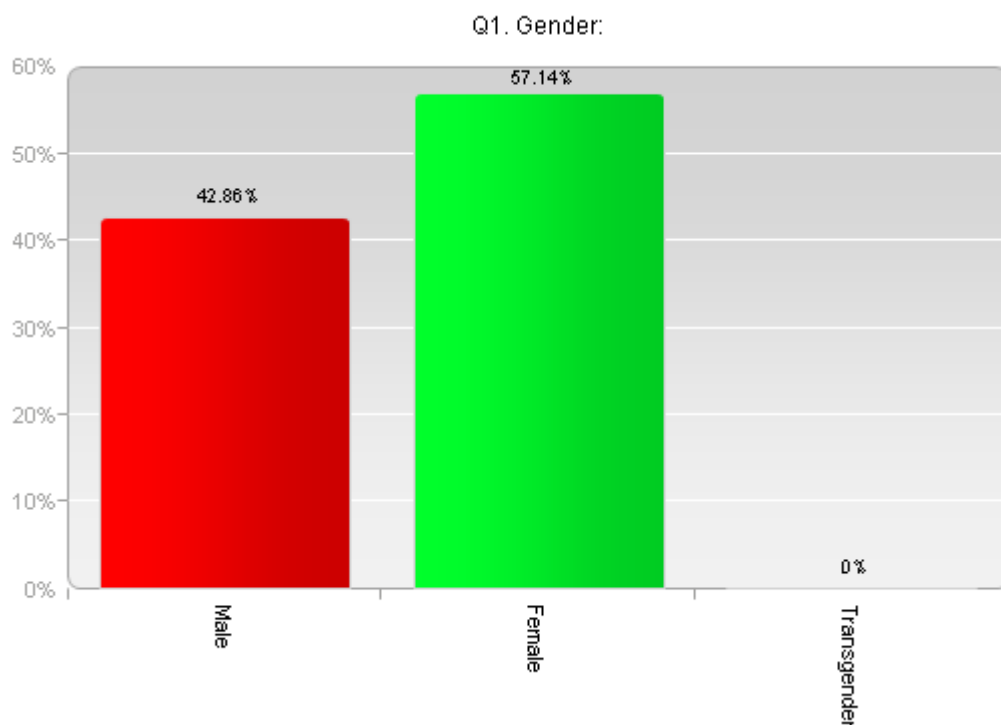


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## Appendix G

## Results of Post-Implementation Survey

Gender:



Q2. Age: (Enter a whole number)

Count

Percent

7

100.00%

Count

Percent

1

14.29% 26

1

14.29% 23

1

14.29% 22

1

14.29% 21

1

14.29% 20

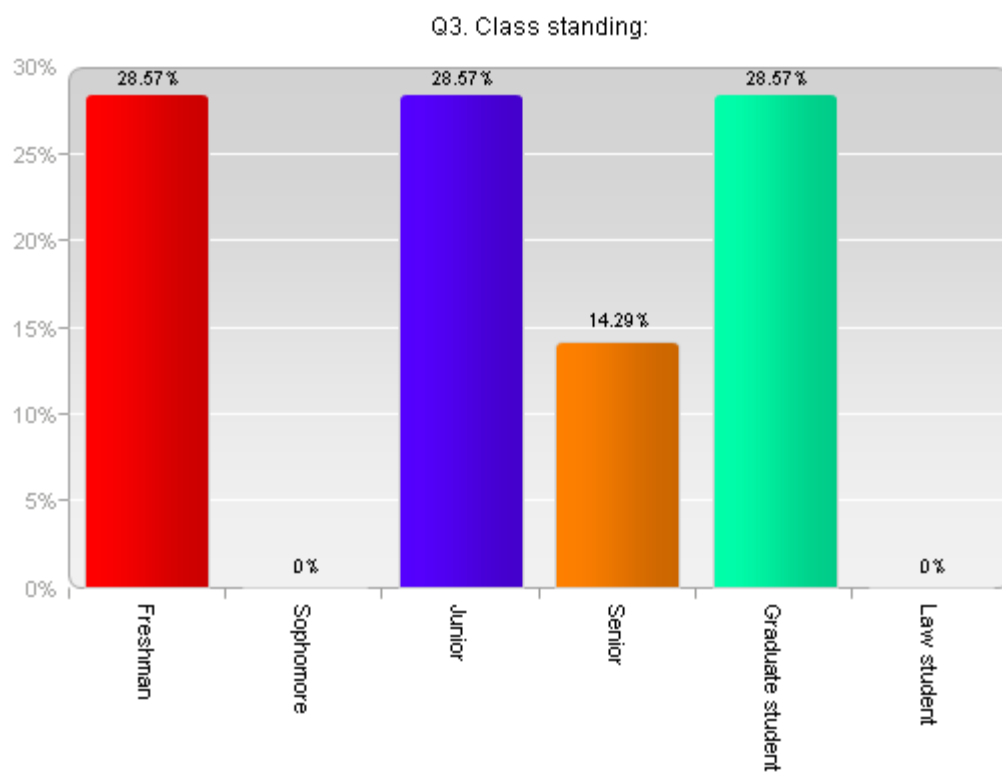
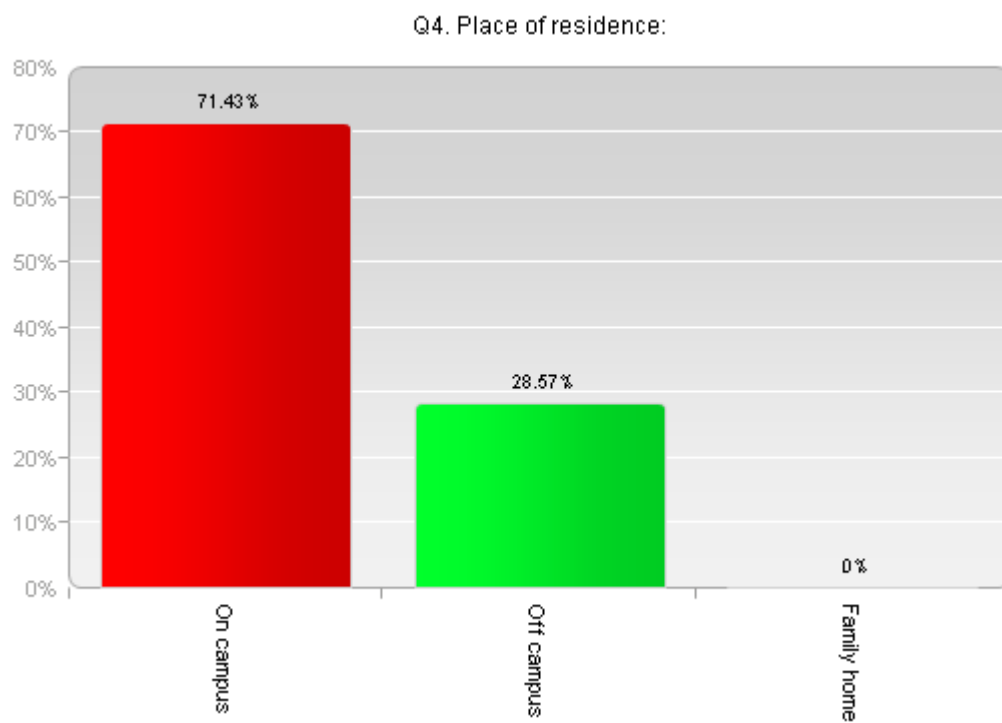
2

28.57% 18

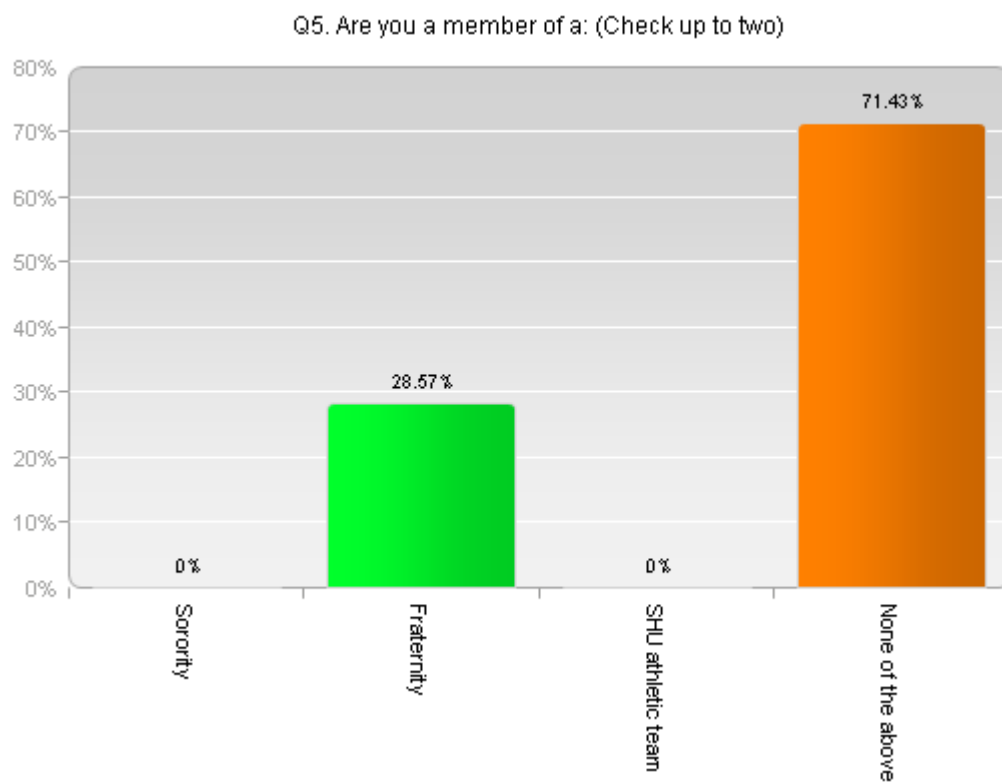
7

Respondents

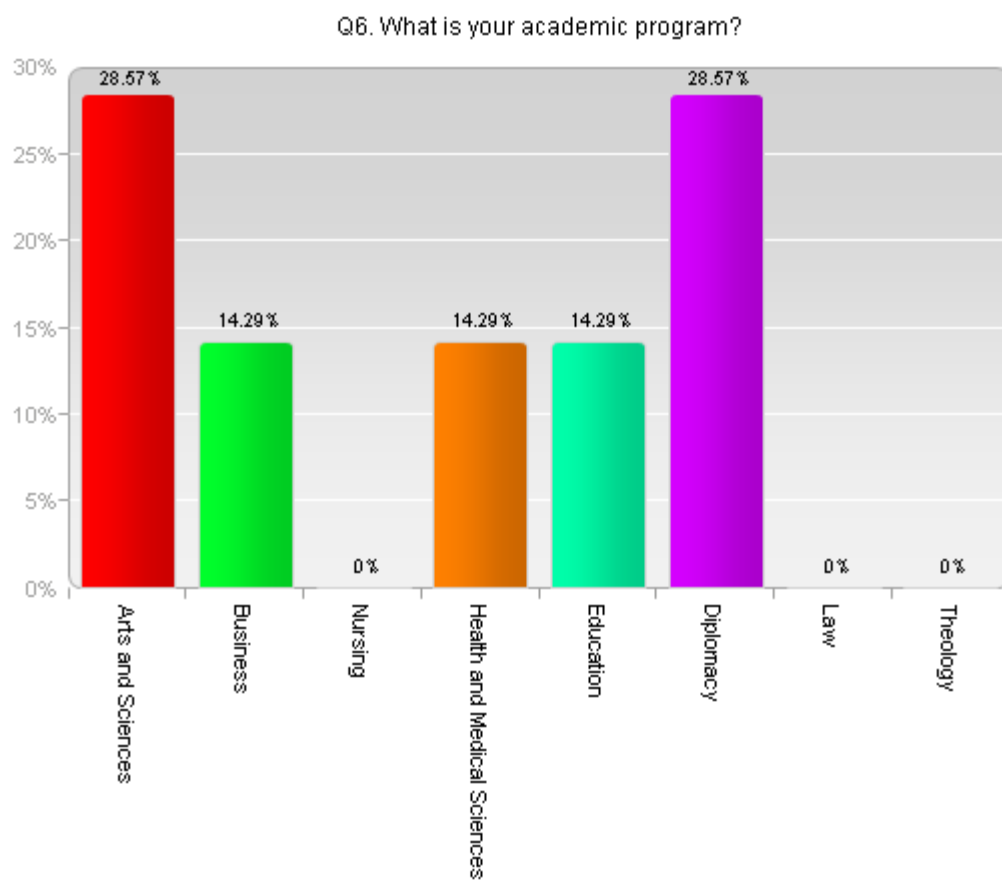
Q3. Class standing:

**Q4. Place of residence:**

**Q5. Are you a member of a: (Check up to two)**

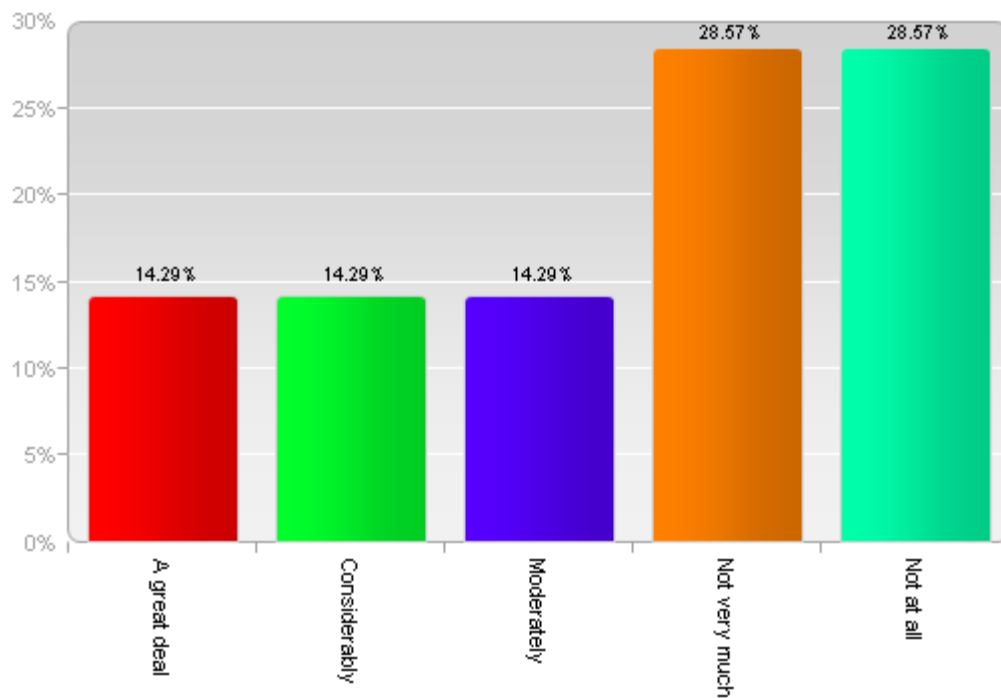


**Q6. What is your academic program?**



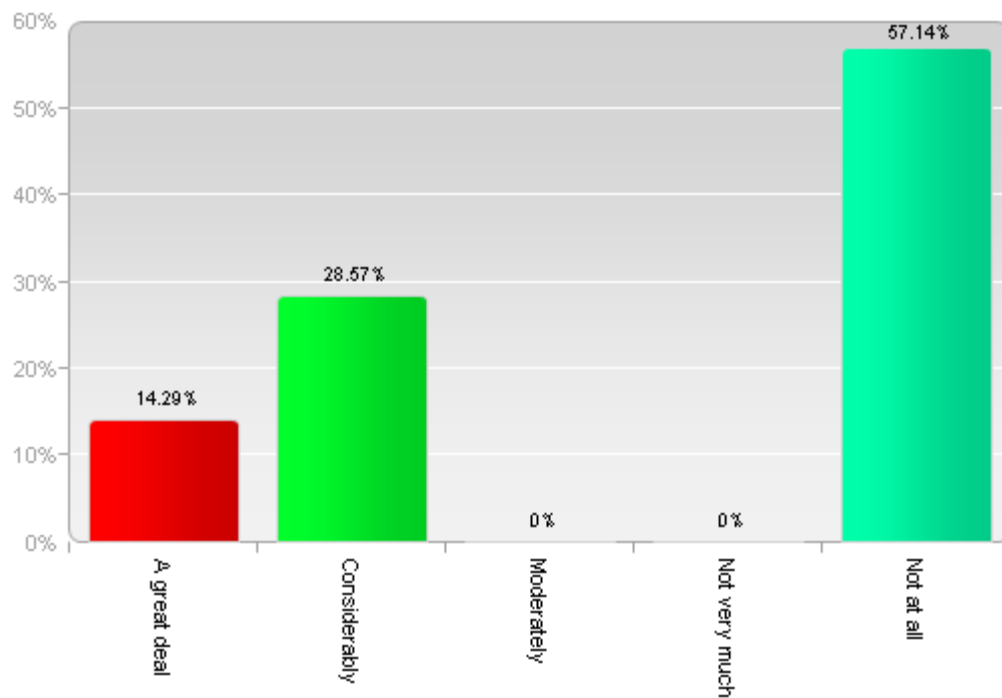
Q7. How much did the screening and brief intervention . . .? - Raise your awareness about harmful drinking patterns

Q7. How much did the screening and brief intervention . . .? - Raise your awareness about harmful drinking patterns



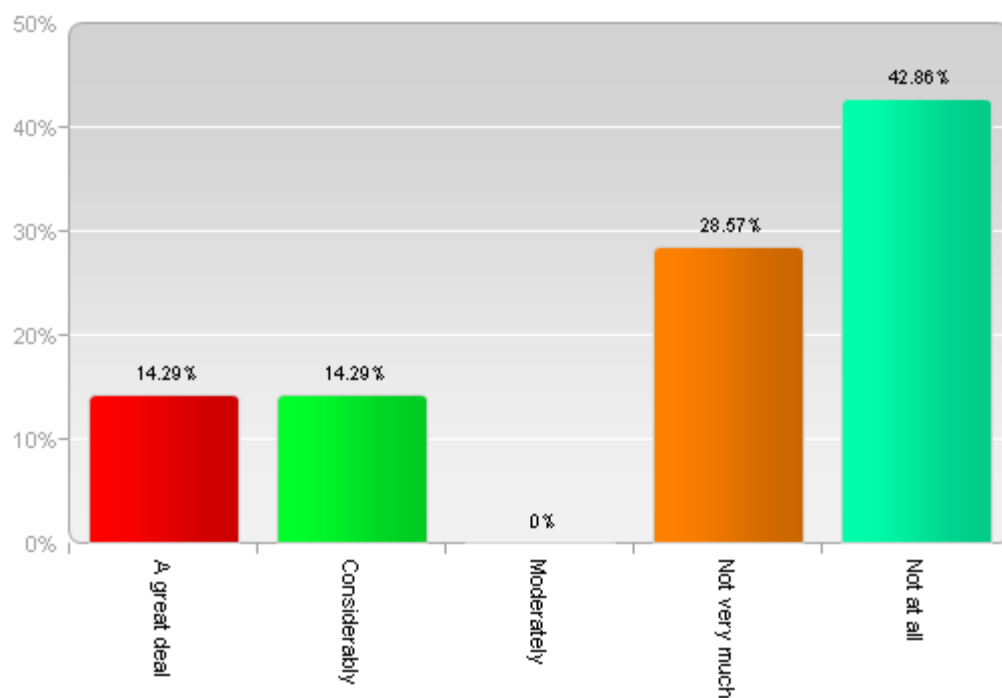
Q8. How much did the screening and brief intervention . . .? - Increase your knowledge about the consequences of hazardous drinking

Q8. How much did the screening and brief intervention . . . ? - Increase your knowledge about the consequences of hazardous drinking



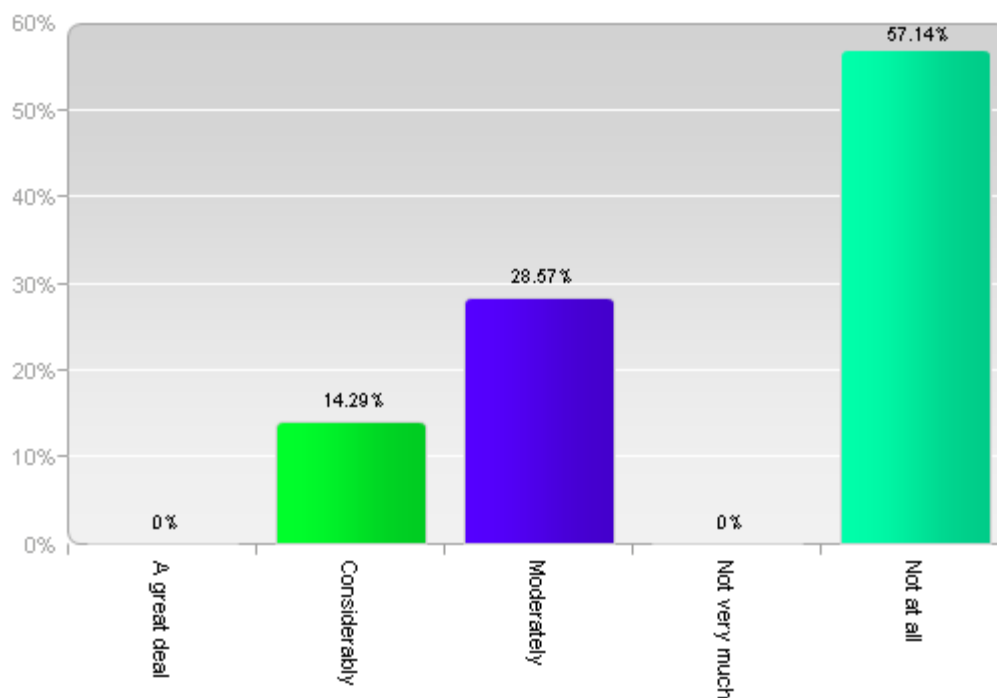
Q9. How much did the screening and brief intervention . . . ? - Influence your decisions about alcohol use

Q9. How much did the screening and brief intervention . . . ? - Influence your decisions about alcohol use



**Q10. As a result of the screening and brief intervention, to what extent have you cut down on your alcohol use?**

Q10. As a result of the screening and brief intervention, to what extent have you cut down on your alcohol use?

**Q11. What aspects of the screening and brief intervention did you find most helpful?**

Count	Percent
5	100.00%

Count	Percent	
1	20.00%	Finding out basic alcohol limits
1	20.00%	I didn't find the screening helpful at all to be honest. I am not a drinker at all, with the most I drink in one sitting being 3 drinks and drinking at the most frequency being every other week and I was told that I had a problem with alcohol. I don't think this screening should be done at all.
1	20.00%	Identifying that there is an alcohol problem I need to be aware of was helpful.
1	20.00%	not much
1	20.00%	the aspects that I found most helpful was the nurse coming to talk to me

5	Respondents
---	-------------